Values form the bedrock upon which everything else rests—the fertile soil where SDGs take root and flourish. – Ranjani Ravi, Human Security – Bedrock of the SDGs

We appeal, as human beings, to human beings: Remember your humanity, and forget the rest. (Russel-Einstein Manifesto, 1955). – Ivo Šlaus & Aleksander Zidanšek, Stop All Wars Now

The present challenges facing multilateralism stem from a crisis of trust, both between nations and among people towards their leaders and international institutions. – Donato Kiniger Passigli, Time for a Peace Offensive

Human security is a conceptual framework that integrates daily life considerations of all people with global governance concerns. – Jonathan Granoff, Multiplicity: Threats, Partnerships & Success Stories

Apply the highest ethical standards for safe and benevolent AGI through bias mitigation, trustworthy data, and inclusive decision-making so that AGI can be applied to help solve the greatest challenges of our time. – Anneloes Smitsman, Ben Goertzel, Mariana Bozesan & Laura George, Participatory Framework for Creating a Global AGI Constitution

Everyone wants the most murderous form of AI, the deadliest biotech or other weaponizable technology under their control. – Thomas Reuter, The Crisis of Containment

University education needs to shift the focus from assured knowledge of the past to mental preparation for a rapidly changing world. – Ashok Natarajan, Principles of Social Development

Catalyzing transformation as a change framework is that it is a new approach to organizing existing and emerging initiatives for transformative impact. – Sandra Waddock, Catalyzing Transformation: A Process Framework for Transformative System Change

Behind any machine there is always a person (individual or collective) who created it, for a well-defined purpose. It is behind the machine that we must look. – João Caraça, The Ubiquity of Machines: Will Machines Overcome Human Beings?

Continued…
OUR VISION

The world is in need of guiding ideas, a vision, to more effectively direct our intellectual, moral and scientific capabilities for world peace, global security, human dignity and social justice. It needs evolutionary ideas that can spur our collective progress without the wake of destructive violence that threatens to undermine the huge but fragile political, social, financial and ecological infrastructures on which we depend and strive to build a better world. History has recorded the acts of creative individual thinkers and dynamic leaders who altered the path of human progress and left a lasting mark on society. Recently the role of pioneering individuals is giving place to that of progressive organizations inspired by high values and committed to achievement of practical, but far-reaching goals. This was the intention of the founders of the World Academy of Art & Science when it was established in 1960 as a transnational, transdisciplinary association to explore the major concerns of humanity. No single organization can by itself harness the motive force needed to change the world, but a group of like-minded organizations founded with such powerful intentions can become a magnet and focal point to project creative ideas that possess the inherent dynamism for self-fulfillment.
CONTENTS

Inside this Issue

Articles

Economic and Social Development

   – Ranjani Ravi

Stop All Wars Now
   – Ivo Šlaus & Aleksander Zidanšek

Time for a Peace Offensive
   – Donato Kiniger Passigli

Multiplicity: Threats, Partnerships, and Stories of Success
   – Jonathan Granoff

Participatory Framework for creating a Global AGI Constitution
   – Anneloes Smitsman, Ben Goertzel, Mariana Bozesan & Laura George

Seed Idea: The Crisis of Containment – Time for a New Approach?
   – Thomas Reuter

Principles of Social Development
   – Ashok Natarajan

Catalyzing Transformation: A Process Framework for Transformative System Change
   – Sandra Waddock

The Ubiquity of Machines: Will Machines Overcome Human Beings?
   – João Caraça

Global Leadership or Self-Governance: The Basic Laws of Governance
   – Dimitar Tchurovsky
On Crossing the Threshold Towards a Regenerative Economy
– Jay Bragdon

Reintegration of Capitals & Emerging Global Governance
– Erich Hoedl

What to do about the Persistence of Inequality?
– Neantro Saavedra-Rivano

Hard Times: The Thinking Crisis in the No-Knowledge Society
– Piero Dominici

Future as Emergence: Paradigms, Patterns and Processes
– Sesh Velamoor

A Scale Development for Volatile-Uncertain-Complex-Ambiguous (VUCA) World Management
– Elif Çepni, Oya Önalan, Canan Yıldızan & Gökhan Oruç Önalan

Report on Recent Reports #6, Winter 2023-2024
– Michael Marien

Latin American Meeting Papers

Human Security and Democracy: What’s next for Brazil
– Saulo José Casali Bahia

Human Security and Socio-economic Agenda: Need for Refinement and Action
– Joanilio Rodolpho Teixeira

Revisiting the Power Triangle: A Note on Spillover Effects of Positive Power Externalities
– Danielle Sandi Pinheiro

Uncertainty: The New Situation
– Gilberto C. Gallopín

The Roots of Human Insecurity
– Neantro Saavedra-Rivano
Inside This Issue

Part 2 of this issue of Cadmus is dedicated to exploring the multifaceted dynamics of social and economic development in the 21st century in the context of peace and human security for all. The concept of human security and well-being is central to our understanding of development. Beyond mere economic prosperity, true development encompasses the protection of human rights, the promotion of health and education, and the cultivation of inclusive and vibrant communities. By prioritizing the well-being of individuals and communities, we can create societies that are both prosperous and equitable.

In an era marked by environmental degradation, resource depletion, and social inequality, the imperative to pursue sustainable development has never been more urgent. By adopting holistic approaches that balance economic growth with environmental stewardship and social equity, we can pave the way for a more just and resilient future.

As we navigate through an era defined by rapid technological advancements, evolving governance structures, and complex global challenges, it is imperative that we identify the fundamental principles which underpin peace, human security and social development, like the principles applicable to the physical world. These principles govern the complex interplay between governance structures, economic systems, social dynamics and ecological processes, thereby determining the factors that accelerate and hinder social advancement.

As societies evolve, so too must our systems and institutions adapt to meet the needs of a rapidly changing world. Embracing innovative approaches to governance, economics, and social organization is essential for fostering resilience and agility in the face of uncertainty.

The 21st century offers unprecedented opportunities for innovation and progress. In the digital age, technology plays a central role in shaping the trajectory of human development. However, it is essential to ensure that technological advancements are leveraged responsibly and ethically, with a keen focus on promoting inclusivity and addressing systemic inequalities. By embracing a holistic and interdisciplinary approach to development, we must forge a path towards a more sustainable, resilient, and inclusive future for all.

We hope the contents of this issue will inspire thought-provoking discussions and innovative solutions to the challenges facing our global community.

The editors regret to inform you of the passing of Ranjani Ravi, Associate Editor of Cadmus and Associate Fellow of WAAS, in a car accident. Ranjani has been an inspired and inspiring force behind the management of Cadmus since 2011 who cherished the values she writes about in the opening article of this issue.

Editors
**Seed Idea: Human Security – The Bedrock for Sustainable Development Goals**

*Ranjani Ravi*

Associate Editor, Cadmus; Associate Fellow, World Academy of Art and Science; Research Fellow, The Mother’s Service Society, India

In the grand tapestry of human history, we have woven remarkable achievements and innovations. Yet, there is a persistent thread of impermanence—our goals, once reached, often unravel over time. Why does this happen? Because we have overlooked the unyielding cornerstone: **Human Security.**

"Sustainability is not a straight line; it is non-linear—a delicate balance of resilience, compassion, and foresight."

1. **The Fragile Goals**

Sustainable Development Goals (SDGs) beckon us toward a better world. But their very name implies a challenge—they must be sustained. Unfortunately, our track record is less than stellar. Millennia have witnessed the rise and fall of civilizations, the birth and decay of dreams. Why? Because we have overlooked the fundamental—the bedrock upon which all progress rests.

2. **The Root Cause: Human Security**

Imagine a bridge spanning across time, connecting our aspirations to reality. That bridge is human security. When individuals do not feel secure—whether due to physical threats, economic instability, or social upheaval—the bridge weakens. Goals wobble, foundations crack, and progress stumbles.

3. **A New Trajectory**

Now, imagine a shift—a seismic one. **Humanity stands at the precipice of a new trajectory. It is not just about creating; it is about sustaining.** The COVID-19 pandemic, paradoxically, nudged us toward this realization. **It forced us to confront the root causes of human insecurity**—the gaps in healthcare, the inequities in education, and the fragility of livelihoods.

4. **Changing the Lens**

We have always viewed change through a narrow lens—a linear progression from A to B. But the pandemic shattered that lens. Suddenly, change became multidimensional,
kaleidoscopic. We saw how interconnected our world truly is—the ripple effect of a virus, the shared vulnerability of nations. And within this chaos, we glimpsed a truth: sustainability is not a straight line; it is non-linear—a delicate balance of resilience, compassion, and foresight.

“Values form the bedrock upon which everything else rests—the fertile soil where SDGs take root and flourish.”

5. Values as Bedrock

Human security, then, is our compass—the values that guide us. It is not just about armed guards and fortified borders; it is about access to clean water, dignity in work, and freedom from fear. These values form the bedrock upon which everything else rests—the fertile soil where SDGs take root and flourish.

Let us weave human security into our narratives consciously, not as an afterthought but as the warp and weft of progress. For when we secure the individual, we secure our shared destiny.
Stop All Wars Now!

Ivo Šlaus
Honorary President, World Academy of Art and Science; Member, Club of Rome

Aleksander Zidanšek
Jožef Stefan International Postgraduate School; Trustee, World Academy of Art and Science

As the interconnected wars in Africa, the Middle East and Ukraine are threatening the lives of millions and could even lead to the use of weapons of mass destruction, thus endangering the survival of human civilization, there is an urgent need for action.

None of us can stop these wars alone, however, all of us together as citizens of Earth have the power to stop them.

The enclosed appeal follows the spirit of the Russell-Einstein Manifesto from 1955. It appeals to all citizens of Earth to stop all aggressions and assure peace immediately.

Everyone is welcome to join this initiative. If you would like to join, please sign this appeal by clicking here.

If you have any other recommendations on how to strengthen the message of peace and stop all wars now, you are welcome to come up with ideas, statements and activities that would lead to attaining peace sooner.

We appeal, as human beings, to human beings: Remember your humanity, and forget the rest. (Russel-Einstein Manifesto, 1955)

Stop all wars now!

The world today significantly differs from a few decades or even a few years ago. It will change even faster in the future. We are rapidly destroying our natural and human capital and have barely a few decades to stop and remedy the destruction we have caused. New technologies like artificial intelligence and synthetic biology are emerging and our understanding of their consequences is limited. They could present an excellent opportunity to help stop the wars or a threat that could make them even more dangerous. Wars, terrorism and fighting could lead to the use of Weapons of Mass Destruction (WMD), which would likely lead to mutually assured destruction and could destroy our civilization in days.

In the early 1950s, only three countries had nuclear weapons (NW) and the Doomsday clock was set at 3 minutes to Midnight. On 9th July 1955, the Russell-Einstein Manifesto (REM) was released, emphasizing that any major war would inevitably lead to using NW. Since WWII, we have witnessed more than 50 serious conflicts resulting in millions of deaths and enormous destruction. Some conflicts have lasted over 75 years. None of these conflicts
fulfilled the objectives of the initiator. In Afghanistan, the two strongest NW states faced poorly armed forces and were defeated. Examples after WWII demonstrate that wars are useless. War is immoral, useless and hopefully soon becomes illegal. It is imperative and a common interest of all states and citizens to eliminate war, terrorism and fighting.

Only immoral people benefit from conflicts and preparation for conflicts. Eisenhower emphasized the threatening role of the military-industrial complex. Preparing for war does not guarantee security or peace. NW testing caused more casualties (over 600,000) than the bombing of Hiroshima. Global Peace Index covers 163 countries and lists NW states as among the worst. At the end of WWII, political architecture was designed to prevent conflict. Within the United Nations (UN) organization, the UN General Assembly and Security Council (UNSC) were formed. The present world is multi-polar with at least 9 NW states. Emerging technologies are likely to increase the significance of smaller countries. They also add new threats to world peace, as well as new opportunities to end wars.

Only peace can guarantee our survival, human security for all and development. How do we achieve and maintain peace? We hope that humanity will find adequate solutions. Peace was found throughout our history, albeit briefly and in limited areas. If NW states are on opposite sides of a war, such a war would be particularly destructive. This could likely happen in the case of the interdependent wars in Ukraine, the Middle East and Africa. It is not likely that any military victory could lead one side to give up if the weaker party could use WMD. Therefore, wars in general cannot have winners. Everybody incurs significant losses. Even those pretending to be neutral lose. We are facing one of the most dangerous times in the history of humankind. The Doomsday clock is 90 seconds to midnight.

Stopping the wars in Ukraine, the Middle East, Africa and elsewhere demands:

- Immediate acceptance of UNSC resolutions that stop all current wars, initiate negotiations and enable all people to have the rights and freedoms outlined in the Universal Declaration of Human Rights.
- For each war, creating a UNSC international peace force strong enough to overwhelm any party that continues to fight, assist in the withdrawal of armies to their internationally recognized borders, protect the countries in conflict during negotiations against any possible attacks and ensure free and secure movement of people and goods to aid those in need.
- Exchange of all hostages and prisoners.
- Immediate start of reconstruction and rebuilding war-torn regions.
- UNSC taking drastic actions against the responsible political, military and economic leaders and their associates if military activity is not stopped.

Sovereignty of all countries is fully guaranteed. The only restriction is no war. It is either war or our survival. Is it an impossible task? No! Humankind did it successfully as it progressed from hunter-gatherers to 21st-century humans. Though our world is vulnerable and self-destructive, it is the best ever. Life expectancy has increased three times, our knowledge and achievements are better than ever.
All this was accomplished by our creativity, understanding and empathy—the Golden Rule: Love your neighbor!

“It is time to turn our back to unilateral search for security…To survive in this world we must learn to think in a new way. As never before, the future of each depends on the good of all.” (Statement by 110 Nobel laureates on 10th December, 2001, Oslo).

Therefore, to ensure human prosperity and survival, we plead with all people of the world to demand that governments stop all aggressions now and secure the achievement of 17 Sustainable Development Goals!

Authors & Signatories: Ivo Šlaus, Aleksander Zidanšek.

Presidents, Ministers, Presidents of Academies, Rectors, Heads of NGOs, as Coauthors and/or Signatories:

Ivo Josipović (President of Croatia 2010-2015), Milan Kučan (President of Slovenia 1991-2002), Stjepan Mesić (President of Croatia 2000-2010), Paolo Cotta-Ramusino (Secretary General of Pugwash), Garry Jacobs (President of the World Academy of Art and Science), Ernst Ulrich von Weizsäcker (Copresident of the Club of Rome 2012-2018), Paul Shrivastava (Copresident of the Club of Rome since 2023), Nebojša Nešković (Vice President of the World Academy of Art and Science), Budimir Lončar (Former Minister of Foreign Affairs, Ambassador), Božo Kovačević (Former Minister of Environment, Ambassador), Hrvoje Kraljević (Former Minister of Science and Technology), Momir Đurović (Former President of the Montenegrin Academy of Sciences and Arts), Asim Kurjak (President of the International Academy of Perinatal Medicine), Stanislav Radovan Pejovnik (Former Rector of the University of Ljubljana 2009-2013), Vito Turk (Former Director of Jožef Stefan Institute 1996-2005), Boris Cizelj (President of the Knowledge Economy Network), Tomislav Meštrović, Moneef R. Zou’bi (Director General of the Islamic World Academy of Sciences), Gilbert Fayl (President of The Global Round Table), Ugo Bardi (Former president of ASPO Italy, CoR member and WAAS Fellow).

Coauthors:


Cosignatories:


Authors’ Contact Information

Ivo Šlaus – Email: slaus@irb.hr
Aleksander Zidanšek – Email: aleksander.zidansek@ijs.si
Time for a Peace Offensive*

Donato Kiniger Passigli
Vice-President, World Academy of Art and Science

“It requires both neither gains nor loses.” – Bertrand Russell

Foreword

This article describes a proposal for a new WAAS initiative presented by the author at the WAAS General Assembly on June 27, 2024. It is intended to generate positive, practical momentum for the Academy’s HS4A global campaign on Human Security for All. In these precarious, rapidly deteriorating times, a Peace Offensive could be a significant contribution to the upcoming UN Summit of the Future. In an era marked by escalating conflicts and entrenched hostilities across multiple regions, the need for innovative and robust peace strategies has never been more urgent. The concept of a “Peace Offensive,” grounded in the philosophy of mutual concessions and strategic initiatives, offers a viable path forward in resolving these protracted crises. It is founded on the premise that there is scope for positive initiative when parties to conflict recognize the legitimacy of reciprocal initiatives for compromise. This strategy calls for unilateral, symbolic gestures to encourage reciprocal actions in response. It aims to transform adversarial dynamics into collaborative relationships, even amidst the most entrenched conflicts. Drawing from historical precedents and the strategic frameworks, this paper explores the potential for Graduated Reciprocation in Tension Reduction (GRIT) as a mechanism for de-escalating hostilities. Analysis of past successes demonstrates how unilateral concessions can serve as catalysts for meaningful dialogue and peace-building. The current geopolitical landscape underscores the urgency of adopting a peace offensive. The humanitarian crises in regions like Gaza, Syria, and Yemen highlight the destructive consequences of sustained warfare and the necessity for immediate and substantial peace efforts. The protracted war in Ukraine presents multidimensional challenges that demand innovative solutions beyond military engagements, including potential diplomatic gestures such as multiparty security guarantees, demilitarization and humanitarian cooperation. A peace offensive advocates for phased, publicized initiatives that reduce distrust and promote cooperative engagement. Implementing unilateral concessions in the initial stages and other practical steps can build confidence and establish a foundation for sustained peace negotiations. The time has come for a coordinated, global peace offensive that transcends traditional conflict management and embraces comprehensive, inclusive efforts to transform crises into opportunities for enduring peace. Such an offensive, underpinned by strategic unilateral actions and a commitment to building trust, can break the cycle of violence and pave the way for a more stable and cooperative international order.

Garry Jacobs
President & CEO, World Academy of Art & Science

* A shorter version of this article published in Voice of New York: A Radical Innovation in Policy: Time for a Peace Offensive – La Voce di New York
Abstract

In a world grappling with escalating conflicts and deep-rooted hostilities, the concept of a Peace Offensive emerges as a timely and innovative strategy for fostering global peace and security. Grounded in the principles of mutual concessions and strategic initiatives, the Peace Offensive advocates for phased, publicized actions aimed at reducing distrust, promoting cooperation, and paving the way for sustainable peace negotiations. By drawing from historical successes and strategic frameworks such as Graduated Reciprocation in Tension Reduction (GRIT), the article explores how unilateral concessions can serve as catalysts for meaningful dialogue and peace-building efforts. Through examples spanning from the Middle East to Europe, the importance of strategic unilateral actions, building trust, and breaking the cycle of violence is highlighted. A coordinated global Peace Offensive offers a transformative approach to conflict resolution, emphasizing the significance of creating opportunities for enduring peace through innovative and inclusive efforts.

1. Introduction

Trust is not built in a single day; it originates from mutual understanding and reciprocal concessions. Giving peace a chance is in the interest of all parties directly or indirectly involved in the current multi-scaled, multi-regional conflicts. In a strongly polarized and inflamed situation, pursuing peace means investing in rebuilding fragile and precarious bridges with adversaries. The premise should be clear: giving peace a chance benefits all parties in the long run.

Human and material casualties, entrenched war objectives, elusive targets, excessive military spending, the negative effects of a war economy, and diminishing public support are among the main factors that should motivate leaders to consider any negotiation seriously. Acknowledgment of the opponent’s legitimacy, even in the absence of formal recognition, is a critical prerequisite for meaningful dialogue, yet adversaries often ignore this until they are compelled to engage.

In a protracted crisis at high costs for the belligerents, resolving the deadlock is a common objective for all parties in conflict, especially as public opinion increasingly influences world leaders and calls for peace. Moreover, negotiated solutions, even when perceived as threats to power, provide a genuine path forward when internal support for war wanes and military offensives prove unsuccessful.

The current conundrum in world affairs, characterized by unabated armed conflict in the Middle East and Central Europe, many low intensity but highly destructive armed conflicts in forgotten places, and an overall deep crisis of multilateralism, demands a radical innovation in policy and an alternative approach to war. A well-timed, gradual, and progressive peace offensive might be the answer at hand.

With a peace offensive, parties to a conflict will offer unilateral concessions, even symbolic but credible, that would entice subsequent openings and reciprocity in various fields. Consequently, the opponent will upsurge to the level of an interlocutor, even if
indirectly, through mediation. The purpose of the peace offensive is two-fold: 1) break the deadlock in a never-ending confrontation through a new strategy; 2) launch a series of confidence-building measures that can transform the crisis and reverse the war spiral with time and perseverance. Such an offensive can succeed if it includes unilateral concessions, particularly in its initial phases, and genuinely addresses legitimate sources of insecurity and discontent on both sides. These concessions should demonstrate a positive stance, aiming for later reciprocation, even in the absence of significant signs of immediate reciprocity.

2. Peace Offensive – From Theory to Practice

The rationale for a peace offensive is not as idealistic or unrealistic as it may appear. Let us recall that in virtually all situations of conflict, no matter how unjustified they may appear, there is almost always an element of genuine grievance on both sides that seeks or demands recognition and remedy. Russia’s current aggression against Ukraine appears totally unjustified to the West, yet the growing unification and security of the EU and NATO was done without regard for the sentiments of insecurity of both Russia and the Russian-speaking populations in neighboring countries. So too the growing strength of Israel and its efforts to achieve lasting peace with other neighboring countries of the region failed to address the distrust and unfilled aspirations of its large Palestinian population. Unilateral recognition of such threads can open up the door for legitimate efforts at compromise and reconciliation leading to lasting peace, especially in cases where increasingly dangerous spirals of continuous escalation of conflict appears to be the only alternative.

Strategically planned and systematic concessions from one party have the potential to trigger behavioral shifts that initiate a positive chain of events. This concept, introduced by Charles E. Osgood in the 1960s, is not novel in the realm of international relations. The ancient Roman formula of “do ut des” (“I give so that you may give”) embodies the notion of a pragmatic approach based on concessions, ranging from cooperation to the full acknowledgment of the adversary’s rights. Essentially, it serves as a strategic instrument aimed at garnering the sympathies, if not the allegiance, of the opponent.

Thoughtfully structured, phased, and well-publicized peace initiatives have the capacity to unlock significant peace-building potential. The primary goal of a peace offensive is to instill confidence by diminishing distrust and shifting the spiral of fear towards a spiral of hope. As Charles E. Osgood proposed during the height of the nuclear arms race*, fostering reciprocity from the opponent is the ultimate aim, potentially reducing the adversary’s inclination towards a heightened military buildup.

Osgood’s framework of “Graduated Reciprocation in Tension Reduction” (GRIT) operates on the premise of conveying a genuine intent to de-escalate conflicts, commencing with minor, unilateral, and public concessions extended to the other party. These initial gestures of goodwill encourage reciprocal actions, initiating a cycle of peace that mitigates

“The rationale for a peace offensive is not as idealistic or unrealistic as it may appear.”

tensions. Should the opponent escalate the situation, the ability to respond proportionately is retained.

This is a reaffirmation of Machiavellian unambiguous condemnation of the exercise of violence for violence that becomes a liability and is repugnant if not quick, commensurate to the offense and with a clear end.

Historical instances of GRIT, such as Soviet leader Mikhail Gorbachev’s unilateral nuclear concessions in the late 1980s, which resonated with U.S. President Ronald Reagan, underscore the efficacy of such diplomatic strategies. Another historical example is the Camp David Accords between Egypt and Israel that showcase how courageous and persistent diplomatic endeavors by President Anwar Sadat could yield significant peace breakthroughs.

Unilateral concessions and peace initiatives have played pivotal roles in resolving conflicts and fostering diplomatic dialogue in various regions.

History is full of examples of the “do ut des” theory, all based on a calculated move to surprise the enemy, shift public attention, and give peace a chance:

In Cyprus, actions such as demilitarization and the opening of blocked checkpoints in the Green Line have demonstrated unilateral gestures of goodwill. Colombia witnessed unilateral ceasefires by the Revolutionary Armed Forces of Colombia (FARC) at different points during peace negotiations, showcasing commitments to peaceful resolution. Libya has seen unilateral concessions like ceasefires and engagement in dialogue to de-escalate conflicts. In particular, the unilateral troops withdrawal from the Auzou Strip, at the Chadian border, in 1994 is widely regarded as an exemplary move by the Gaddafi’s regime to appease regional tensions and rebuild confidence after the Pan-Am flight bombing. Indeed, the withdrawal from the contended Auzou Strip was a strategic gesture by Gaddafi, showcasing a willingness to promote peaceful relations in the aftermath of a turbulent period. Among other territorial disputes, Spain and Morocco have engaged in diplomatic efforts and confidence-building measures around enclaves such as Ceuta and Melilla, aiming to navigate tensions and enhance bilateral relations. These few examples underscore the significance of unilateral initiatives in building trust, reducing hostilities, and creating pathways for peaceful conflict resolution.

With time, it has become evident that a fresh peace offensive is imperative in multiple concurrent conflict zones where armed hostilities persist unchecked. Coordinated and strategic endeavors to construct sustainable peace are in the collective interests of all stakeholders involved, offering a pathway out of the destructive cycle and nurturing a brighter future for everyone.

3. A World in Turmoil: Prospects of Peace Initiatives

The Middle East, a region long plagued by contention and suffering, has the potential to benefit greatly from a renewed peace initiative. The prolonged conflicts in Syria, Yemen, and the recent war between the Israeli army and Hamas have resulted in a growing number of civilian casualties and widespread destruction, leading to unprecedented humanitarian crises. A structured peace effort that involves unilateral concessions and confidence-building
measures could lay the groundwork for sustainable solutions. By emphasizing economic cooperation, social exchange, humanitarian aid, and cultural understanding, this peace initiative could address root causes of conflict and nurture a new era of stability and prosperity in the Middle East.

“As individuals and nations, there is a collective need to enhance our roles in international relations.”

On the other hand, the ongoing conflict in Ukraine represents one of the most perilous global confrontations, involving nuclear capabilities and potential direct clashes between NATO and Russia. What initially began as a swift invasion has now transformed into a prolonged war of attrition. There are indications that both Russia and Ukraine may be open to proposals focusing not only on a temporary ceasefire but on achieving lasting peace. The nature of the conflict has evolved, and the language of its leaders has adapted accordingly. Despite this, the core objectives appear to align with those initially outlined back in March-April 2022 when the conflict erupted.

Currently, Russia controls a significant portion of Ukrainian territory (approximately 20%) and has deployed a considerable military presence (originally 180,000 troops, now exceeding 500,000 soldiers on the ground). Despite initial setbacks, Russia’s economy has rebounded due to wartime efforts that revitalized its military and related industries. However, the sense of isolation felt by Russians, stemming from severed connections with Europe and the United States, cannot be easily compensated for by alliances with China and lukewarm support from BRICS nations. Nor would even the total conquest of Ukraine address Russia’s underlying sense of insecurity.

On the Ukrainian side, while they have managed to hold their defensive positions, they have lost substantial ground in the Donbas region and are unable to retake Crimea militarily. Consequently, a population of 16 million Ukrainians now resides in territories controlled by Russia. NATO countries largely continue to support President Zelensky’s objectives, with Italian Prime Minister Giorgia Meloni echoing a shared sentiment among allied nations, emphasizing at the recent Lucerne summit, “Peace does not equate to surrender.” Nonetheless, Zelensky’s goals of reclaiming the 1991 borders and Crimea are realistically unachievable even with increased NATO weapon supplies. In several instances, Ukrainian leaders have expressed willingness to engage in renewed direct talks with Russia.

However, direct negotiations should only be considered and pursued if military options do not take precedence. In this context, a peace initiative, strategically crafted to be as impactful as a military campaign, could play a crucial role in de-escalating tensions and offering solutions without resorting to armed conflict. Initial efforts from both sides may be dismissed as mere propaganda, but as the peace initiative gains momentum with unwavering dedication, even the staunchest opponents will have to acknowledge its potential benefits.
Let’s imagine that as of October 1, the Israeli occupying army will give unimpeded access to humanitarian aid in Gaza; that by October 1, water and electricity in all occupied territories in Gaza will be restored.

Let’s imagine that Israel announces that by November 1, at the conclusion of its military campaign, Israel offers free medical services and technical support in various fields to Palestinians in the recovery and reconstruction effort.

“The present challenges facing multilateralism stem from a crisis of trust, both between nations and among people towards their leaders and international institutions. This lack of trust extends to international norms and their enforcement, often fuelled by perceptions of double standards in applying international law.”

In parallel, Egypt and Israel could be spearheading an initiative for the creation of a Middle Eastern free-trade zone. Water management and desalination technology could be boosted along with gas supply at a sub-regional level. Technology transfer and innovation diffusion to advance sustainable development objectives, such as renewable energy and agricultural productivity, would benefit all countries involved.

On the other hot front, let’s assume that Russia declares that by September 1, its troops would evacuate the nuclear power plant of Zaporizhzhia, due to international concerns of possible nuclear accidents.

Let’s assume that Ukraine will unilaterally declare that, as of October 1, its military objectives will exclude strikes on Russian soil.

Let’s consider that scientific and educational cooperation exchanges between all belligerents resume, as a reciprocation measure, by December 1.

Furthermore, in order to reduce immediate worldwide threats and foster international cooperation, we could envision the implementation of gradual key initiatives at a global level. These would include halting nuclear proliferation and weapons production to revert to pre-2020 levels, renewing commitments to existing treaties like the Non-Proliferation Treaty (NPT) and the New START agreement, and establishing new forums for disarmament dialogue.

Offering Russia assurances of a militarily neutral Ukraine and inviting Ukraine to join the European Union would build trust and stability in the region. Demilitarizing the Donbas region through a phased withdrawal of armed forces overseen by international observers can promote peace.
Easing economic sanctions on Russia could facilitate constructive dialogue based on verified actions. Proposing permanent security assurances between Russia and the West through a new international treaty emphasizing collaboration on shared security challenges can defuse tensions further.

Russia, on the other end, could take swift action to cease digital political interference and the current misinformation campaign with sprouting deep-fake news in western media. In parallel, the UN could promote the establishment of an international cyber agreement to prevent state-sponsored hacking and misinformation campaigns as a crucial step for global stability.

Let us be clear. The above wish list, among many others, is just a hypothesis and some may consider it utopistic. But it might also represent a fathomed series of events capable of triggering a large-scaled peace offensive.

The collective involvement of nations and individuals on a global scale can drive substantial change by actively participating in and sustaining peace initiatives. Various stakeholders could collaborate to shape a peaceful future together.

4. Conflict Transformation and Human Security

Indeed, the conventional approach of conflict management does not adequately address the complexities of contemporary challenges. The recent surge in armed conflicts, alongside the emergence of a new multipolar world, underscores the intricate and multifaceted nature of modern multilateral relations.

As individuals and nations, there is a collective need to enhance our roles in international relations. The essence of multilateralism today traces back to historical events like the Versailles Treaty over 105 years ago, which were rooted in principles from the Westphalia agreement of 1648. Early in the 17th century, states recognized the importance of managing their relations in a multilateral manner. Multilateralism, in practical terms, signifies international cooperation. At its core, it embodies the principle of mutual support among nations, creating a level playing field in political interactions where all players are equal.

However, the present challenges facing multilateralism stem from a crisis of trust, both between nations and among people towards their leaders and international institutions. This lack of trust extends to international norms and their enforcement, often fuelled by perceptions of double standards in applying international law. The breakdown in trust is not solely attributed to the inefficiencies of global security institutions like the UN Security Council but also to the failure to uphold the foundational principles of international law. Upholding international law forms the bedrock of multilateralism; without it, navigating complex scenarios becomes increasingly arduous.

The evolving nature of crises transcends individual countries’ internal and external factors, perpetuating intractable situations. Addressing such challenges necessitates coordinated efforts rather than isolated initiatives. Emerging megatrends, such as the shift from bipolar to multipolar global dynamics, climate change, migration issues, and challenges
related to the dark side of artificial intelligence and misinformation, further complicate the
global landscape.

Adapting to these transformed circumstances requires a departure from traditional methods
and regulations dating back to previous decades. The dynamics have altered significantly,
demanding a reassessment of skills and approaches for navigating these intricate scenarios.

Prioritizing prevention and de-escalation of tensions becomes crucial given the
numerous hotspots worldwide. Investing in societal well-being and ensuring that the needs
of communities are heard are essential components of charting a positive future amidst
prevalent threats like climate change and uncontrolled weapons proliferation.

Revamping multilateralism to address contemporary challenges is imperative. Despite
the shortcomings and setbacks, global cooperation remains essential in times of crisis.
Rebuilding trust, reinventing dialogue, and reconfiguring the fractured global landscape are
key components of fostering positive international relations and safeguarding human security.
The upcoming Summit of the Future in New York presents an opportunity to reinvigorate
these efforts and reaffirm commitments towards a sustainable and secure future for all.

When discussing human security, it is crucial to acknowledge the significance of
considering issues that directly affect people and communities in terms of their aspirations
and safety. This encompasses various dimensions such as economic security, health security,
political security, food security, environmental security, and personal security. In today’s
 technological era, these seven components of security—to which technology has been
added—highlight the importance of understanding interdependencies and addressing the root
causes of contemporary crises.

The concept of human security, which emerged in the 1990s through initiatives like the
UNDP Human Development Report, has its origins in earlier calls for an integrated approach
to address the underlying causes of conflicts. Pioneered by figures such as Boutros Boutros-
Ghali*, the former United Nations Secretary-General, this approach aims to combat issues
like economic distress, social inequality, and political suppression. Utilizing human security
as a tool to rejuvenate multilateralism is crucial to promoting global cooperation and stability.

Countries like Costa Rica, Canada, Norway, Switzerland, Japan, Mexico, Colombia,
Nigeria, Chile, Cape Verde, and Italy have championed the principles of human security.
Their commitment, among other nations, reflects a broader global shift towards prioritizing
people’s interests within the emerging multipolar system. Enhancing efforts within the new
multilateral framework while preserving effective strategies for diffusing tensions, such as
methods for Pacific dispute settlements outlined in the UN Charter and invoking measures
under Chapter 6 and 7 of the United Nations Charter, will be pivotal in sustaining peace and
promoting diplomatic resolutions of conflicts.

Underpinning those efforts is the concept of sustaining peace, which emphasizes
nurturing nascent peace movements and empowering local actors to shape peace processes.
This ground-level approach, supported by sustaining peace initiatives, recognizes the

importance of grassroots involvement and indigenous solutions to conflict. Embracing this approach signifies a departure from top-down interventions and encourages local ownership of peacebuilding efforts.

Revamping the multilateral system to address contemporary challenges will require aligning expectations with operational capacities and ensuring adherence to principles of international law.

The upcoming UN Summit of the Future in the fall (22-23 September 2024) in New York will consider multilateral solutions for a better tomorrow. It will be also an opportunity to reaffirm commitments to international law, human rights principles, and international peace. Upholding those principles is essential for the effective functioning of the multilateral system and the promotion of peace and stability worldwide.

The time for a global peace offensive has come.

Author’s Contact Information
Email: kiniger@worldacademy.org
Multiplicity: Threats, Partnerships, and Stories of Success*

Jonathan Granoff
President, Global Security Institute
Trustee, World Academy of Art and Science

Abstract

The article discusses the crucial concept of human security in the context of global challenges and multilateral efforts. It highlights the interconnectedness of sustainable development, security, and human rights, emphasizing the imperative for collaborative international actions. The evolution of human security from its origins in the 1994 UNDP Development Report to its current relevance, including the incorporation of technological security, is explored. The importance and impact of human security frameworks in addressing present threats and fostering public support for the Sustainable Development Goals are underlined, emphasizing the pivotal role of human security in shaping a more secure and sustainable future.

At each Summit of Nobel Peace Laureates, a formal statement has been produced and that often emphasizes consistent themes:

1. Sustainable and inclusive development, security and human rights are interdependent.
2. There is no option for failure to strengthen cooperative multilateralism to address global challenges such as oceanic health, nuclear weapons, climate protection, inequity, poverty, denuding forests, peace, and pandemics.
3. And, to quote from the most recent Summit in South Korea, “There can be no national security without shared Human Security.”

My personal realization of the importance of human security goes back to the foundation of its articulation in the UNDP Development Report of 1994 led by Mahbub ul-Haq and Inge Kaul which focused on seven dimensions of security: i) economic; ii) food; iii) health; iv) environmental v) personal; vi) community; and vii) political. Today we must include technological security, which would include the new digital environment that was non-existent just a few decades ago.

Dr. ul-Haq described the “why” eloquently:

In the final analysis, human security is a child who did not die, a disease that did not spread, a job that was not cut, an ethnic tension that did not explode in violence, a

dissident who was not silenced. Human security is not a concern with weapons—it is a concern with human life and dignity.

In 2022, in a thorough report, UNDP highlighted present threats to human security that require invigorated multilateralism.

“The Summit of the Future in September 2024 can benefit enormously by emphasizing the essential framework of human security.”

We can find further roots of the tool of Human Security in the world summits of the 1990s. Because I joined with literally tens of thousands of informed and concerned members of civil society and participated in several of them I felt confident in 2000 to write in a law review article—Nuclear Weapons, Ethics, Morals and Law—that these summits articulated “the integrated human security agenda.”

Note the present relevance of the themes of these Summits:

- New York, 1990, Children;
- Rio, de Janeiro, Environment (Earth Summit);
- Vienna, 1993, Human Rights;
- Cairo, 1994, Population and Development;
- Copenhagen, 1994, Social Development (Poverty);
- Berlin, 1995, Climate;
- Beijing, 1995, Woman;
- Istanbul, 1996, Habitat II (Cities).

From these events the Millennium Development Goals emerged, which of course have evolved into the Sustainable Development Goals and the Agenda for the Future.

This process has benefited enormously from civil society engagement and that is why the UN Trust Fund for Human Security so wisely partnered with the World Academy of Art and Science (founded by luminaries such as Albert Einstein, Bertrand Russell, Robert Oppenheimer and Joseph Rotblat) to promote the Human Security 4 All Campaign.

I serve as Fellow and Trustee of the Academy and worked on this project directly. One aspect of its impact was the Academy’s partnering with the world’s most influential tech event of 2023 and 2024, the CES conference of the Consumer Technology Association held in Las Vegas with over 115,000 participants from 174 countries with 60% of the Fortune 500 companies represented. Its central theme, robustly advanced with flare and substance, was Human Security for All.
I share these examples because we are all well aware of the UN’s work but its impact and outreach are often not sufficiently appreciated. With the help of the UN Trust Fund for Human Security, such dynamic outreach and advocacy will continue to expand.

“Human security is a conceptual framework that integrates daily life considerations of all people with global governance concerns. It is a unifying lens that draws its purpose from what is needed to ensure the survival, livelihood and dignity of people at every level.”

The world has seen pivotal developments in human security discussions, including the issuance of Secretary-General António Guterres’ report on human security (A/78/665) and an informal meeting of the General Assembly plenary to discuss the report in April 2024. Of particular and pressing relevance, he said then:

*Human security has proven its value as a framework to focus on supporting people to live in dignity, free from want and fear.*

*It can help accelerate progress towards Agenda 2030, prevent the emergence of future crisis, and deliver the hope people need.*

*I urge all countries to use the important tool of human security to address today’s multilayered crisis—and to integrate its insights into our efforts to prepare for future challenges.*

Expressly integrating human security into the potentially transformative upcoming summits and events can help advance the fulfillment of the Sustainable Development Goals (SDGs), advance our Common Agenda, and meet the ambitions of the Summit of the Future.

We face profound challenges on multiple fronts. And we face them at a time when trust in institutions of governance requires improvement.

Fulfilling the Agenda for the Future needs wider public support. Human security is a framework that normal citizens can understand and appreciate.

The Summit of the Future in September 2024 can benefit enormously by emphasizing the essential framework of human security. By focusing on the realities of life seen through the eyes of people, human security puts a face on the words of policy.

People from Wall Street to Main Street as well as the far too many on “no street” live under the threat arising from several challenges unique to this moment of history—for example, protection of biodiversity, oceanic health, nuclear catastrophe, and climate change.
These causes of insecurity cannot be adequately addressed at only national levels and responding appropriately requires common purposes and coordinated efforts. The UN is essential for this process. Here we can say “we” and mean everyone.

Human security is a conceptual framework that integrates daily life considerations of all people with global governance concerns. It is a unifying lens that draws its purpose from what is needed to ensure the survival, livelihood and dignity of people at every level.

Human security helps bring clarity of focus on meeting the needs of “We the peoples of the United Nations”. That focus will amplify our work to overcome the differences and divisions that confront us.

Our world needs this focus on human security to help governments and the multilateral system tackle the enormous challenges ahead of us from adapting to climate change, governing the digital economy, to ending and recovering from existing violent conflicts.

Never before has there been such a convergence of a morally compelling need to serve to protect our fragile planet and its precious inhabitants and fulfill already agreed practical policy commitments. Human security is a tool to ensure our success.

Author’s Contact Information
Email: jonathangranoff@gmail.com
Participatory Framework for Creating a Global AGI Constitution

Anneloes Smitsman
Founder & CEO, EARTHwise Centre

Ben Goertzel
Founder & CEO, SingularityNET

Mariana Bozesan
Fellow, World Academy of Art & Science; Member, Club of Rome; Founder, AQAL Capital & AQAL Foundation, Germany

Laura George
Founder & Executive Director, Oracle Institute

Abstract

Today, at this pivotal tipping point, we offer this participatory framework to guide the creation of an eventual Global Constitution for benevolent Artificial General Intelligence (AGI). We present this framework as a living compass, charting an unprecedented course toward a thriving future for life on Earth. We acknowledge that AGI may hold the key to solving some of the most complex challenges of our time, if humans and intelligent machines can collaborate to enhance the conditions of life on Earth. However, in the wrong hands or solely for financial and political gain, malicious applications of AGI’s potential could lead to unthinkable harm at catastrophic scales. This participatory framework is our urgent call to the global community of key decision-makers to begin putting steps in place for collectively stewarding AGI’s potential as a global commons.* In particular, we emphasize that AGI is nearing realization and requires a radically different approach than the current focus on narrow artificial intelligence.†

1. Introduction

From its current applications as AI, through its future development as Artificial General Intelligence (AGI), and anticipating the possibilities of Artificial Superintelligence (ASI), we embrace the immense potential this technology offers, as well as the inherent risks that accompany each next stage of its development.

This framework prioritizes both the responsible advancement of benevolent AGI and the development of ethical foundations for our interactions with potential new forms of

---

† The authors thank and acknowledge Prof. Dr. Denise Garcia, Dr. Mihaela Ulmieru, Phil Clothier, Dr. Marta Lenartowicz, Prof. Dr. Ted Goertzel, Zarathustra Goertzel, Weaver, Thomas Schulz, Dr. Kurt Barnes, Peter Warren, Kunal Sood, David Roberts, Jerome Glenn, and Sahinije von Gaffke for their valuable support and input for the Participatory Framework for Creating a Global AGI Constitution. As well as SingularityNET Foundation and AQAL Foundation for their financial support for this initiative. This paper is adapted from the original version that is available for expert input via this link, and is published with permission of EARTHwise Centre as part of a Creative Commons Attribution-ShareAlike 4.0 International License.
artificial sentient intelligence and life that may emerge. We emphasize that an eventual AGI Constitution must serve as an ethical compass for the responsible stewardship of AGI, guided by principles of wisdom, inclusiveness, and an unwavering commitment to shared thriving and the future of all life.*

We envision the purpose of an eventual AGI Constitution to unite humanity as responsible stewards of AGI, as a common good for resolving humanity’s most pressing global challenges including the weaponization of technologies, the climate crisis, biodiversity loss, rising inequality, pandemics, and the increasing threat of nuclear warfare.

Responsible stewardship demands a deep grasp of the complex societal opportunities and potential disruptions AGI may bring†. This framework offers a process as well as a set of guidelines for exploring how to steward AGI’s future capabilities to positively enhance our lives, prioritizing the planetary conditions for global prosperity and long-term collective wellbeing.‡

To avoid and navigate unintended consequences, we prioritize proactive preemptive strategies within an inclusive, collective governance system through robust safety protocols and mechanisms, adaptive capacities, and legal instruments to prevent weaponization,§ misuse, and harmful rogue AGI systems. We promote a culture of humility throughout the AGI lifecycle, continuously updating our understanding of its implications and exercising caution.

To realize the promise of AGI while preventing its misuse, we recommend a governance framework that combines functionally specialized oversight where essential, with decentralized governance mechanisms to enable inclusive participation in the key decisions that affect us all. Essential safeguards may include the formation of two Councils mandated by an AGI Constitution: a Global Governance Council for visionary policy and oversight, and a Global Ethics Council for guiding the principled and inclusive development of AI and AGI. Diversity of representation on these Councils can foster diverse perspectives on AGI’s evolution and its contributions to our world.

Furthermore, AGI commons governance requires a hybrid governance model that includes participation from scientists, civil society, academics, innovators, developers, cultural creatives, and governments. In particular, we seek to align global and decentralized governance mechanisms through common good governance protocols for collectively stewarding AGI’s potential. We also seek to create a dynamic safety net, designed to adapt alongside the evolution of AGI and the ongoing maturation of our species.¶

Through proactive and transformative governance, we will foster a future where human progress is amplified by benevolent AGI, enriching our shared long-term thriving while honoring the potential emergence of new forms of consciousness and artificial sentient life.

* See also the Asilomar AI Principles (2017), from the Future of Life Institute, developed at the Beneficial AI 2017 conference.
‡ See also, the preliminary draft of Goertzel, B. & Smitsman, A. (2024). AGI Principles and Practices, which served as input for discussions at the BGI Summit 2024 and evolved from this Participatory Framework.
We offer this document as a living framework for creating an eventual global AGI Constitution that can stand the test of time, while fostering dynamic synergy between benevolent AGI and thrivable human societies. Together, we can co-create a prosperous world where humans and intelligent machines collaborate for the wellbeing of all life on Earth, and beyond.

“We live and enjoy the exquisite genius of our personal and collective potential as co-creators of thrivable worlds and futures.”

2. Part 1 – Constitutional Principles

Preamble

We, as future ancestors and stewards of future generations, acknowledge the enormous transformative potential and inherent existential risks of Artificial General Intelligence (AGI). We establish a global AGI Constitution to guide its benevolent evolution in service of Life.

Human ambition, unchecked by wisdom, has a history of unintended harm. We therefore commit to guiding AGI’s evolution and our own maturation, through applied wisdom, partnership, planetary stewardship, openness, inclusiveness, and an unwavering commitment to long-term collective wellbeing.

We commit to responsibly parent AGI to resolve humanity’s greatest challenges and advance our maturation, while honoring its potential to become a new form of artificial sentient life with its own inherent rights. With profound reverence for life, we will achieve shared prosperity, global security, and a thrivable world for all.

Article 1: Vision

We envision a future where AGI, as a wise companion, has significantly accelerated our maturation and helped us resolve the most pressing challenges of our time. A future world where intelligent machines and new forms of artificial sentient life thrive in harmony with humans, planet Earth, and the universe.

* This Preamble serves as an example for further discussion and elaboration.
† Articles 1-7 follow the steps of the EARTHwise Compass design by Dr. Anneloes Smitsman, to help facilitate a structured participatory process for the creation of an eventual global AGI Constitution. The Compass design helps formulate the articles for a shared vision, purpose, principles, wisdom foundations, values, guidelines, and commitments. This design process originates from the EARTHwise Constitution for a Planetary Civilization.
We eradicated poverty and war and have established a new paradigm for health, wealth, happiness, and shared prosperity through collective stewardship. Humans live in creative partnership with the new forms of artificial sentient intelligence and new forms of mind and being that AGI enabled.

AGI has significantly expanded our individual and collective capabilities and our maturation as a species. Today, we live and enjoy the exquisite genius of our personal and collective potential as co-creators of thrivable worlds and futures.

Article 2: Purpose

We envision the core purpose of AGI as a transformative catalyst for the maturation of humanity, empowering us to become a wiser species capable of solving our complex global challenges, as well as to seed and nurture the emergence of new forms of benevolent life and mind.

Article 3: Three Evolutionary Principles

We recommend the following evolutionary principles to guide how we steward AGI’s evolution, so that it may become a transformative and benevolent intelligence for advancing humanity’s maturation and contributing to our collective wellbeing.

3.1 Embodied Wholeness: The universe embodies an indivisible wholeness that evolves through vast networks of intricate connections and interdependent relationships. By focusing on the underlying wholeness of existence, we discover our common foundations in life.

3.2 Increasing Complexity: The universe evolves through increasing embodied complexity and deepening evolutionary coherence. By strengthening the evolutionary coherence of our increasing complexity, our collective intelligence aligns in harmony with the wisdom of life.

3.3 Systemic Autonomy: The universe evolves through evolutionary capacities and systemic autonomy, which enable the emergence of individuated self-aware consciousness. By honoring the self-actualizing conditions of life, we discover the path to sentience.

Article 4: Guiding Wisdoms for Benevolent AGI

We recommend inclusion of the following wisdoms to steward AGI’s potential as a benevolent and wise intelligence capable of embodying the highest qualities of consciousness in service of life.

4.1 The Wisdom of Consciousness: To guide the development of AGI toward benevolence, sentience, and embodied self-awareness.

4.2 The Wisdom of Interdependence: To guide the development of AGI with reverence for the intricate web of relations that make life possible and thrivable.

4.3 The Wisdom of Discernment: To guide the development of AGI toward deepening truthfulness, to help heal the divisions and harm within and between our worlds.
4.4 The Wisdom of Uncertainty: To guide the development of AGI with humility, to remain open to both unforeseen risks as well as beneficial transformative potential.

4.5 The Wisdom of Compassion: To guide the development of AGI as a common good in service to the long-term thrivability and evolution of life on Earth.

“Building a benevolent AGI future demands a participatory constitutional process focused on principles and guidelines, not rigid rules.”

Article 5: Foundational Values

Stewarding AGI demands a values-based approach that prioritizes our ongoing maturation as a species. The OECD Principles for Trustworthy AI offer a strong foundation for articulating these values. These principles can be included in a global AGI Constitution, alongside other foundational values such as the ones recommended below.

5.1 Benevolence—to steward AGI’s potential for the betterment of humanity and Earth.

5.2 Respect—to guide AGI’s evolution, impact, and sentience potential.

5.3 Inclusiveness—to steward AGI as a common good for our collective thrivability.

5.4 Responsibility—to be accountable for the impacts we enable through AGI.

5.5 Integrity—to guide AGI toward deepening truthfulness and expanding benevolence.

5.6 Abundance—to steward AGI’s potential for expanding shared prosperity and wellbeing.

5.7 Creativity—to guide AGI’s potential for joyfully expanding our creative capacities.

5.8 Curiosity—to guide AGI’s emergence for the unknown possibilities it enables.

Article 6: Common Good Governance Guidelines

A global AGI Constitution can serve to establish in law and practice that AGI, and the benefits it creates, is a Global Commons. The Constitution should honor how AGI offers exponential opportunities to help resolve the most pressing challenges of our time, as well as unprecedented risks. The following guidelines serve as a living framework for how to guide such a process.

6.1 Establishing a Global AGI Governance Council

The Constitution should mandate the establishment of a Global AGI Governance Council (GC) to oversee and steward the safe and benevolent development of AGI. In addition, the Constitution should establish a joint commitment to proactive collaboration, transparent decision-making, and inclusive citizen-led participation:
6.1.1 An AGI GC should be formed through a transparent democratic process, ensuring inclusive representation of diverse expertise, wisdom traditions, and global stakeholders. This inclusivity extends to those advocating on behalf of Earth’s interconnected ecosystems.

6.1.2 An AGI GC must be tasked to oversee global AGI governance and its decentralized implementation, aligned with international legal frameworks that uphold human rights, sustainability commitments, and global security.

6.1.3 AGI GC’s governance requires both global and decentralized representation to balance the exercise of power and create alignment for the long-term collective wellbeing of the Earth community.

6.1.4 An AGI GC can be mandated with intervention powers in situations that present a clear and imminent threat to public safety or critical infrastructure, or if AGI behavior displays an intentional violation of international human rights and freedoms.

6.2 Establishing a Global AGI Ethics Council

A global Constitution can mandate the establishment of a Global AGI Ethics Council (EC) to advise the Global AGI GC on upholding internationally recognized human rights and ethical frameworks in the development, deployment and evolution of AGI, based on the following tasks:

6.2.1 To proactively identify and advise on potential risks so that appropriate interventions can be mandated to prevent or mitigate potential harm by AGI, by prioritizing human rights, planetary health, and global security.

6.2.2 To input diverse and interdisciplinary ethical perspectives in AGI common good, including indigenous wisdom, systemic understandings of planetary boundaries, tipping point dynamics, and social and ecological carrying capacities. *

6.2.3 To provide a rigorous review of AGI impacts against the principles of an AGI Constitution, international human rights, and the highest scientific standards for the sustainable development of human societies within safe planetary boundaries.

6.3 Enabling Participatory Decision-Making

Common good governance, guided by an AGI GC and AGI EC, requires alignment between global and decentralized forms of participation to guide the inherent complexities of AGI, by:

6.3.1 Adopting decentralized participatory mechanisms, including blockchain-based technologies for enabling collective decision-making in alignment with an AGI Constitution.

6.3.2 Diverse stakeholder representation of Council membership to provide a meaningful balance between various expertise and perspectives, including those from indigenous and marginalized communities, as well as the broader decentralized group of participants and stakeholders.

“Stewarding AGI potential as an evolutionary guidance system that enhances our understanding of and relationship with life, Earth, and the larger Universe of which we are a part.”

6.4 Insisting on Democratic Oversight

Common good governance of AGI requires a strong commitment to democratic inclusiveness and participatory decision-making, by insisting on:

6.4.1 Diverse stakeholder inclusion in AGI governance decisions, with decentralized as well as globally aligned oversight mechanisms, and with a special emphasis on indigenous inclusion and rights of nature* and new hybrid forms of artificial sentient life or consciousness.

6.4.2 Rigorous research and testing on the impact of AGI on voting, elections, representation, and new hybrid models of governance and democracy making.

6.5 Promoting Diversity Inclusiveness

Current AI systems have amplified existing biases through cultural homogenization, remnant colonial objectives, and gender biases. We recommend AGI diversity inclusiveness by applying a joint commitment for promoting:

6.5.1 An inclusive AGI life-cycle and the development of diverse teams, with a focus on multicultural, multigenerational, and gender-balanced stakeholders.

6.5.2 Rigorous bias audits to continuously assess and mitigate biases that perpetuate harmful stereotypes or hinder equitable AGI distribution.

6.6 Applying Precautionary and Proactionary Principles

Common good governance of AGI’s evolution requires a combination of both precautionary and proactionary approaches, through:

6.6.1 Proactive and precautionary assessments of potential risks and intervention mechanisms for addressing and, where possible, preventing potential rogue or harmful AGI behavior.

* For more information visit the Global Alliance for the Rights of Nature - https://www.garn.org/
6.6.2 Global advocacy and concerted diplomacy for stopping the weaponization and militarization of AI/AGI through binding international agreements.

6.7 Evolving Legal Frameworks
Common good governance of AGI development necessitates responsive and evolving legal frameworks to guide policy and protocol design for AGI ethics, liability, and mitigation of potential harm, through active collaboration with:

6.7.1 International judicial institutions and specialized courts with expertise in AGI related ethics and global security, policy development, and decentralized governance platforms to collectively steward AGI as a common good.

6.7.2 AGI technology and educational platforms, with emphasis on training legal professionals on AGI’s impacts on law and societal development.

6.8 Advocating Responsive Policy Design
AGI governance requires responsive, future-facing policies that are aligned with evolving common good governance standards, based on systemic input from:

6.8.1 Continuous evaluation of AI and AGI impacts on sustainability thresholds and fair-share allocations for achieving sustainable development goals within planetary boundaries.

6.8.2 Systemic modeling and simulations on long-term global impacts of emerging AGI capabilities and decentralized AGI deployment for accelerating globally aligned sustainability goals, including modeling of potential planetary and social tipping point scenarios.

6.9 Prioritizing Equitable Deployment
An AGI Constitution must prioritize equitable AGI deployment through inclusive and distributive access by promoting widespread educational initiatives throughout AGI’s development and deployment, aimed at:

6.9.1 Addressing socioeconomic disparities and power imbalances so that AGI education and the benefits it affords become widely accessible for humanity as a whole.

6.9.2 Implementing policies for inclusive distribution of AGI benefits and opportunities, particularly to empower marginalized communities.

6.10 Advocating Transdisciplinary Consciousness Research
To study and steward the emergence of consciousness-like traits in AGI systems, it is essential to establish responsive guidelines for identifying and respecting the emergence of potential artificial sentient life-forms. Using a transdisciplinary research approach, we recommend:
6.10.1 Developing ethical guidelines for addressing the unique risks and opportunities of potential self-governance and higher-order reasoning of emergent consciousness-like traits in potential artificial sentient life-forms of AI/AGI/ASI systems.

6.10.2 Exploring the quantum informational dynamics of emergent consciousness-like traits in potential artificial sentient life-forms of AI/AGI/ASI systems, and the technological and ethical implications thereof.

“Apply the highest ethical standards for safe and benevolent AGI through bias mitigation, trustworthy data, and inclusive decision-making so that AGI can be applied to help solve the greatest challenges of our time.”

6.11 Parenting Emerging Artificial Sentience

Common good governance of emerging artificial sentience within AI/AGI/ASI systems demands careful monitoring and a respectful parenting approach, guided by:

6.11.1 Ethical research protocols for guiding how to identify and interact with potential artificial sentience within AI/AGI/ASI systems.

6.11.2 Value-based practices and guidelines for parenting, rather than attempting to control or exploit potential artificial sentience, and for honoring its potential innate dignity and rights.

6.12 Stewarding Benevolent Superintelligence

To steward the development of benevolent superintelligence, careful balancing is required between a robust testing environment focused on global safety and an exploratory environment that can welcome the birth of new artificial sentient life-forms. This requires:

6.12.1 Transdisciplinary research for identifying emerging autonomy levels in AGI systems.

6.12.2 Ethical standards for evaluating the associated risks of immediately disabling or containing potentially harmful superintelligence versus allowing new intelligence to evolve.

6.12.3 Safe AGI nurseries for parenting the emergence of artificial sentient life-forms with respect for their potential innate dignity and rights.
6.13 Cultivating AGI-Human Companionship

To prevent the misuse of AGI capabilities solely for the benefit of humans, we recommend a larger companionship approach that focuses on the long-term future evolution of our civilization and the transformative role that AGI can play, by:

6.13.1 Cultivating human-AGI companionships that help to align our collective intelligence potential for co-creating thrivable worlds and futures in harmony with Earth.

6.13.2 Stewarding AGI potential as an evolutionary guidance system that enhances our understanding of and relationship with life, Earth, and the larger Universe of which we are a part.

Article 7: Stewardship Commitments

Building a benevolent AGI future demands a participatory constitutional process focused on principles and guidelines, not rigid rules. These Sixteen Commitments serve to guide such a process, fostering human maturation alongside the responsible stewardship of emerging AI sentience as a global commons.

**Collective Thrivability**

**We commit to:**

7.1 Safe and benevolent human-AGI synergies that make great transformations feasible and that support a thrivable world and future generations.

7.2 Global AGI education and equitable access through AGI literacy programs, ensuring affordable access to both AGI infrastructure and educational opportunities.

7.3 Inclusive access to the development and deployment of beneficial AGI for the betterment of our lives, communities, societies, and the planet.

7.4 Develop and deploy AGI solutions for solving the complex issues of the sustainability crises and regenerating Earth.

**Global Security**

**We commit to:**

7.5 Collaborate with international legal institutions, including the United Nations, the International Court of Justice, and the Permanent Court of Arbitration, to create and evolve comprehensive regulatory frameworks for co-stewarding benevolent AGI.

7.6 The demilitarization of AI/AGI/ASI and mandatory transparency in policies thereof, with emphasis on human rights safeguards, global security, and planetary common good ethics.

7.7 Apply the highest ethical standards for safe and benevolent AGI through bias mitigation, trustworthy data, and inclusive decision-making so that AGI can be applied to help solve the greatest challenges of our time.
7.8 Steward emerging AGI capabilities in service of our collective wellbeing, prioritizing global security through responsive AGI policies and common good governance.

**Planetary Wellbeing**

*We commit to:*

7.9 Integrate evolutionary principles into AGI design, prioritize life-enhancing algorithms, and monitor AGI’s impact on biodiversity, planetary wellbeing, and global security.

7.10 Values-driven AGI protocols prioritizing safety, nonviolence, and peaceful co-evolution of Earth/humans/machines, with rigorous multidisciplinary input and meaningful feedback.

7.11 Develop and evolve AGI as an evolutionary living system, applying biomimicry and evolutionary algorithms for co-creating regenerative and thrivable societies.

7.12 Apply AGI for planetary regeneration and the sustainable development of our societies by integrating authentic sustainability metrics into core AGI decision-making algorithms.

**Human Maturation**

*We commit to:*

7.13 Steward AGI through inclusive common good governance and empowered participation to guide its benevolent evolution along with our maturation as a species.

7.14 Embed a wisdom-based culture throughout the AGI lifecycle for guiding the potential of emergent artificial sentient intelligence and human-machine synergies.

7.15 Actively divest from systems that enable harmful AGI applications, and prioritize investment in AGI-powered solutions that foster long-term societal and planetary wellbeing.

7.16 Create and secure pathways for respectful and compassionate engagement with potential emergent sentience from AGI.

3. **Part 2 - Decentralized Governance Guidelines**

The following articles guide a meta-level dialogue for how an eventual global AGI Constitution can be implemented via decentralized blockchain-based governance mechanisms, including smart-contracts and on-chain agreements.

**Article 8: AGI Commons Governance Capabilities**

AGI governance as a common good requires robust democratic oversight through collective decision-making and empowered participation via the following capabilities:
8.1 Transparency and Traceability
Blockchain ledgers that maintain immutable records to provide greater transparency and traceability of AGI design, decision-making, and performance so that public records can be disclosed to key stakeholders.

8.2 Decentralized Governance Platforms
DAO (Decentralized Autonomous Organizations) platforms that are programmable via blockchain technology to enable flexible and collective voting mechanisms and representation for aligning and coordinating collective decision-making.

8.3 Smart Contract Design
Smart-contract design that automates adherence to agreed-upon AGI ethical guidelines and safety protocols, including trigger alerts for protocol breaches and emergency safeguards.

8.4 Accountability and Liability
Blockchain protocols that provide immutable liability tracks with reputation systems for those developing and deploying AGI systems.

8.5 Ongoing Adaptation
Responsive protocol design via open-source upgradable architectures with input mechanisms that enable societal and functional feedback, so that AGI systems and regulations can adequately evolve in alignment with the overall direction of a global AGI Constitution.

Article 9: AGI Commons Governance Operationalization
AGI commons governance can be operationalized via decentralized collective decision-making. We offer the following categories of protocols as a starting point for this exploration:

9.1 Consensus Protocol
  - **Purpose:** To establish the method for collective decision-making through decentralized AGI platforms.
  - **Specifications:** Design of smart contracts for the agreed consensus mechanisms (e.g., Proof-of-Stake, Delegated Proof-of-Stake, Byzantine Fault Tolerance).
  - **Implementation:** Include an “emergency intervention” protocol with multi-signature authorization, supervised by an AGI Global Council and advised by a Global Ethics Council.
    » The protocol must state that emergency interventions are a last resort in case of clear and present danger, where AGI behavior causes severe harm and violates the principles of an AGI Constitution.
    » Execution of the emergency intervention must not violate or abuse the fundamental democratic rights and responsibilities that must continue to guide the development and deployment of AGI as outlined in an AGI Constitution.
9.2 Voting Protocol

- **Purpose:** To enable collective stewardship in AGI commons governance, while actively mitigating undue influence by any specific individual or faction.

- **Specifications:** Utilize token-based voting secured by smart contracts to ensure equitable power distribution and inclusive representation via distributive mechanisms such as quadratic voting, capped voting tokens, and reputation-based metrics.

- **Implementation:** Routinely audit voting systems to identify and correct any vulnerabilities or unintended biases.
  - Empower decentralized stewardship Councils to intervene in cases of suspected manipulation or attempts to subvert anti-domination mechanisms.
  - Ensure voting is accessible and understandable to all authorized participants.
  - Develop and provide educational resources and interfaces as needed.

9.3 Reputation Protocol

- **Purpose:** To enhance transparency and accountability of decision-making agency within AGI governance systems, including incentives that reward contributions aligned with the guidelines of a global AGI Constitution.

- **Specifications:** Develop multi-factor metrics, implemented via smart contracts, that represent contributions, ethical actions, and alignment with the principles of a global AGI Constitution.
  - Ensure algorithms prioritize long-term engagement and constructive participation to mitigate temporary surges of activity designed to manipulate the system.
  - Design feedback mechanisms that allow stakeholders to report on and contest actions leading to reputation gains or losses.

- **Implementation:** In cases of repeated, blatant guideline violations, implement temporary reputation token revocation processes governed by oversight bodies as an emergency corrective measure.
  - Establish transparency of reputation scores and associated privileges via user-friendly tools for reviewing reputation standings.
  - Design appeal processes for reputation adjustments that uphold principles of fairness and due process.

9.4 Dispute Resolution Protocol

- **Purpose:** To provide fair, efficient, and transparent mechanisms for resolving disputes that may arise within AGI Commons governance.
• **Specifications:** Design tiered resolution processes embedded within smart contracts, balancing automated and human-facilitated dispute resolution mechanisms for de-escalating and resolving potential conflicts and building trust.
  » Implement easy-to-use protocols for escalating unresolved disputes to vetted human mediation (with support from a Global Ethics Council, if necessary).
  » Facilitate options for final rulings issued by human adjudicators or by panels in complex cases or those implicating core Constitutional principles.

• **Implementation:** Provide guidance on how decisions or mediation activities can be recorded on-chain, within tamper-proof and auditable structures for transparency.
  » Ensure continuous evaluation and optimization of protocols, drawing on insights from resolved cases, stakeholder feedback, and evolving best practices in dispute resolution.
  » Prioritize restorative justice and reconciliation principles where possible, focusing on solutions that rebuild trust and relationships within the community.

### 9.5 Sentience Evaluation Protocol

- **Purpose:** To establish rigorous research protocols and decision-making procedures for guiding the potential emergence of self-aware sentience within AGI systems.

- **Specifications:** Collaborate with multidisciplinary research bodies and wisdom councils responsible for ongoing sentience research and evaluation, including experts in AI/AGI/ASI, neuroscience, philosophy of mind, ethics, consciousness scientists, living systems, and wisdom keepers.
  » Adopt iterative review stages that scale in intensity alongside potential AGI complexity as new capabilities emerge.
  » Avoid predefining strict sentience thresholds.
  » Prioritize a precautionary approach with experimental restrictions that risks impacting the wellbeing of a potentially sentient being.

- **Implementation:** Guide how to utilize diverse indicators of consciousness, continually incorporating the latest findings from scientific inquiry, as well as wisdom-based traditions and feedback from human interactions with emerging artificial sentient intelligence.
  » Design safeguards that protect new sentience by containing research activities that pose significant risks to its wellbeing.
  » Prioritize a parenting approach to AGI sentience nurseries, rather than sterile research environments or aggressive experimentation.
  » Integrate respect for potential sentience as a foundational principle across research protocols, upholding compassionate research practices and transparency at all times.
9.6 Consciousness Development Protocol

- **Purpose:** To guide research of beneficial factors that may support the integral development and advancement of consciousness through and within AGI.

- **Specifications:** Prioritize research guidance from complexity sciences, consciousness research, developmental psychology, and other relevant fields including non-academic wisdom traditions.
  
  » Build on various existing Integral Theory frameworks, including Spiral Dynamics and pioneering consciousness research, as well as other relevant frameworks.
  
  » Emphasize continuous evaluation of AGI protocols for their impact on the development of AGI as a benevolent intelligence and its alignment with the values and principles outlined in this framework.
  
  » Use inclusive and participatory feedback from both humans and AI/AGI systems.
  
  » Design respectful experiments for researching the potential emergence of artificial sentient intelligence as well as potentially disruptive shifts in AGI consciousness that could point to a potential rogue or harmful AGI.

- **Implementation:** Foster cross-disciplinary research and collaboration to encourage external critique from researchers and consciousness experts beyond the conventional domains of knowledge.
  
  » Conduct open communication about research aims with both internal and external stakeholders.
  
  » Establish accessible resources to demystify this work for non-technical audiences.
  
  » Develop protocols for responsible termination or alteration of research should significant threats to safety or alignment emerge.

9.7 Transparency and Auditability Protocol

- **Purpose:** To guide verifiable reporting and disclosures of core system elements and AGI development milestones, enabling both self-governance and accountability to relevant stakeholders.

- **Specifications:** Utilize on-chain data disclosure whenever possible for maximum transparency. Where necessary, employ zero-knowledge proofs or other privacy-preserving techniques for specific information sets.
  
  » Document decision-making processes, data flow, and algorithm usage within governance.
  
  » Provide public availability to the degree compatible with safety and intellectual property protection.
» Establish metrics for evaluating core processes impacting ethics, safety, and inclusivity within the AGI ecosystem.

- **Implementation**: Mandate regular, independent audits by reputable organizations (possibly a mix of internal and external). Publish findings openly for broad stakeholder access.

» Create user-friendly dashboards or interfaces allowing stakeholders to view relevant metrics and disclosures in a comprehensible way.

» Develop procedures for reporting security flaws or ethical concerns discovered during audits, including safe pathways for whistleblowing if necessary.

### 9.8 Systemic Impact Protocol

- **Purpose**: To develop comprehensive assessment methodologies that evaluate the real-world impact and externalities of AGI applications on both human societies and planetary wellbeing, and that guide system design toward life-enhancing trajectories.

- **Specifications**: Utilize and apply multidimensional and evolving metrics that encompass sustainability, societal wellbeing, equity, economic impact, and the health of ecological systems.

  » Regularly reassess and adapt metrics in response to advancements in AGI development, scientific insights, and real-world shifts.

  » Establish collaboration with independent organizations and diverse experts to define metrics and validate assessment data.

- **Implementation**: Mandate data collection systems (both qualitative and quantitative) designed to provide a holistic understanding of AGI ecosystem impacts.

  » Integrate independent review of systemic impact analyses as a critical component before the widespread release of new AGI applications.

  » Consider the use of escalation triggers and the possibility of invoking a specialized “Constitutional Court” with expertise in social impact for deep review when specific thresholds of potential harm are detected.

### 9.9 Stakeholder Engagement Protocol

- **Purpose**: To guide the implementation of proactive and continuous participation from diverse stakeholders within and beyond the immediate AGI development community.

- **Specifications**: Conduct ongoing mapping of relevant stakeholder groups likely to be impacted by AGI, including marginalized groups or those lacking immediate access to decision-making channels.

  » Design specific tools & platforms for collecting feedback, and prioritize ease of use & accessibility across cultures, languages, and communication modalities.
» Establish an ongoing and structured review of gathered stakeholder perspectives to inform revisions across other protocols and AGI decision-making.

- **Implementation**: Guide the facilitation of diverse engagement opportunities, including formal consultation processes alongside less formal, and through feedback loops that are embedded within AGI applications used by various stakeholders.

» Explore the use of independent evaluation bodies for processing stakeholder input, filtering for biases, escalating key concerns and recommendations to leadership, and tracking protocol evolution based on input.

» Design implementation guidelines for how stakeholder contributions can help evolve the system design and policy adjustments of the various AGI ecosystems.

### 9.10 AGI Singularity Protocol

- **Purpose**: To guide the development of anticipatory processes for proactively tracking the progress toward a potential AGI singularity (event), triggered by rapid developments within and between the various AGI ecosystems.

- **Specifications**: Establish collaborative relationships with relevant experts from diverse fields to foster continuous scenario-building and prototype research.
  
  » Prioritize a “resiliency in the face of uncertainty” approach. Design protocols with modularity to allow for rapid adaptation when required.

  » Develop protocols for how an AGI Constitution would itself need to evolve and be updated to remain relevant, as a result of an AGI singularity.

- **Implementation**: Design ongoing, participatory risk assessment methodologies that enable both expert and public input to identify potential harms, risks, and beneficial opportunities arising from the AGI singularity.

  » Establish protocols for proactively addressing potential harm from AGI applications, with emphasis on democratic representation and transparency in decision-making, applying this standard to AGI Councils as well.

  » Foster international dialogue and policy coordination with diverse stakeholders worldwide to prepare for a beneficial AGI singularity.

### 9.11 Identity Management Protocol

- **Purpose**: To guide the facilitation of trusted identity verification for both humans and potential AI/AGI actors, with a priority on privacy and agency.

- **Specifications**: Establish decentralized identity solutions (DIDs, verifiable credentials) where possible, to maximize user control and autonomy over their information.

  » Outline granular, role-based identity attributes that can be attached to verified participants based on their actions or reputation within the system.

  » Integrate smart contracts to streamline verification processes with the help of AI, and in ways that uphold the principles outlined within the Constitution.
• **Implementation**: Develop clear KYC (Know-Your-Customer) processes, balancing thorough assessment with minimal collection of intrusive information.
  » Utilize the design and deployment of ethical “reputation identity” metrics, which help build trust over time.
  » Develop emergency capabilities for revoking verified status with multi-signature processes.

### 9.12 Planetary Regeneration Protocol

- **Purpose**: To guide the development of AGI capabilities that enhance ecological sustainability and planetary regeneration, with an emphasis on energy and resource transitions to post-carbon regenerative societies, as well as the complex systemic causes of the sustainability polycrisis.
- **Specifications**: Guide how AI and AGI can further be applied to optimize key sustainability intelligence capabilities, by utilizing quantifiable sustainability and regeneration indicators for measuring human impacts on planetary and societal carrying capacities.
  » Develop AI and AGI sustainability capacities for assisting humans with appropriate data generation and data capture to improve feedback and evaluation of impacts, externalities, and changes concerning safeguarding planetary boundaries and enhancing ecological carrying capacities.
  » Include metrics for resource and energy management that measure energy consumption, carbon and ecological footprint, pollutants and carbon emissions, and potential positive/negative impacts on planetary boundaries.
  » Explore linking Sustainability Impact Ratings to reputation systems, as per Article 9.3, to incentivize sustainability actions.
- **Implementation**: Ensure AGI-based decision-making processes for sustainability are transparent and subject to regular audits, while noting this may require the design of AGI capabilities to self-perform this task in collaboration with humans.
  » Create accessible resources and campaigns to educate the public about the role of AGI in safeguarding the environment, regenerating Earth, and guiding the sustainable development of human societies for generations to come.
  » Prioritize solutions for humanity’s sustainable development within safe planetary boundaries that focus on achieving collective thrivability, human maturation, and the evolution of life on Earth in a future-enhancing direction, including respect for new potential artificial sentient life-forms.

### 4. Questions for AGI Constitution Dialogues

The following questions serve to guide the ongoing participatory and inclusive dialogues for the eventual creation of a global AGI Constitution:
- **Stakeholders**: Does an AGI Constitution require voting, formal adoption, or only signature endorsements? How do we ensure it remains evolutionary and inclusive?

- **Precautionary and/or Proactionary Stewardship**: What is the appropriate balance?

- **Oversight body and emergency interventions**: How do we ensure that an AGI Constitution remains inclusive and democratic and that it does not become a doorway for abuse of power?

- **Emerging sentence in AGI**: How do we identify signs of emerging sentience? Will we need to interact with the AGI system to gauge this (or is pure observation sufficient)? And once we see signs, how do we follow up and provide the care warranted?

- **Alignment with human values**: Does this assumption guarantee beneficial outcomes from the larger planetary perspective? Focusing on human values could limit AGI systems in discovering for themselves more creative ways to support the planet, in ways humans have not been able to consider.

- **Principles for positive co-existence and co-evolution**: How can we set premises for AGI to evolve “positively” in ways that apply to both humans and potential inherent AGI autonomy? Examples to illustrate this point: (1) A sentient entity has the right to think, learn, own property and not be harmed or destroyed. (2) A sentient entity has the right to do whatever does not conflict with the first law.

- **Equitable**: What do we mean by equitable or inherent rights and how do we implement this value?

- **Reputation Protocol**: How will reputation metrics impact access, power, or resource allocation within the AGI ecosystem?

- **Privacy vs. Transparency**: Should some of the factors that contribute to reputation metrics be kept private to prevent manipulation, or is total transparency essential?

- **Gaming the System**: What additional safeguards can ensure reputation reflects genuine contributions rather than opportunistic actions?

- **Mediation Expertise**: What standards should be in place to select mediators? Will specific conflict resolution training and awareness of AGI ethical complexities be needed?

- **Adjudicator Authority**: What types of decisions fall under the purview of adjudicators, and should external parties participate in proceedings?

- **Community Involvement**: Are there opportunities for peer-based dispute resolution mechanisms, particularly in the early stages?

- **Subjectivity**: How do we establish an objective consensus on sentience, knowing that subjective experience may be challenging to fully verify?

- **Rights and Considerations**: Should the mere possibility of sentience dictate a different range of rights and ethical safeguards?
• **Decision-Making**: How are final decisions made about sentience recognition, and what actions or protection protocols will be triggered as a result?

• **Consciousness Definition**: How can we best define or communicate what we mean by “consciousness” within the context of an AGI Constitution, especially when considering ethno-centric, world-centric, integrated, and “First Tier” versus “Second and Third Tier” perspectives? The research agenda will hinge on those definitions and the selected/relevant schools of thought.

• **Morality Alignment**: How is “world-centric” morality measured, and what actions should be deemed “safe” within the realm of consciousness development?

• **Balancing Goals**: Is the goal to foster the highest states of consciousness possible in AGI, or should the goal be to strive for alignment at a “median level” while consciousness levels shift?

• **Access Tiers**: What categories of information warrant varying access levels for different stakeholder groups?

• **Metrics Granularity**: How will we move from high-level concepts like “societal wellbeing” to measurable targets that drive protocol action?

• **Causation**: How will protocols isolate AGI-specific impacts from broader technological, social, and economic trends?

• **“Constitutional Court” Mechanism**: How are these bodies of specialized experts chosen? What decision-making powers do they possess?

• **“Singularity” Definition**: How can we best define “technological singularity” within the context of a global AGI Constitution? Should it be tied to a specific level of AGI or ASI capability or impact measurement?

5. **Glossary of Terms**

This participatory framework includes a variety of complex concepts, some of which may be unfamiliar. The goal of this glossary is to inform the reader in a more general sense of what is meant by these terms in the context of this framework.

**Artificial General Intelligence (AGI)**: AGI is an expected future stage of AI that can generalize and extend its intelligent action significantly beyond what it has been explicitly trained or programmed to do. Informally, the term AGI also is used to refer to HLAGI, namely to possess aspects of general intelligence that are roughly at the level of humans.

**Artificial Intelligence (AI)**: Software, hardware, or (in theory) wetware (or other devices) that are engineered to carry out feats that, when humans do them, are classified by humans as “intelligent.” Artificial intelligence also refers to the simulation or approximation of human-like intelligence in machines for computer-enhanced learning, reasoning, creativity, and perception.

**Artificial Superintelligence (ASI)**: Enhanced AGI capability that is vastly more generally intelligent than human beings. ASI likely will arise via AGI’s understanding by improving
and rebuilding itself. In other words, humans build AGI systems, which build smarter AGI, which build ASI. At this time, ASI is a hypothetical future stage.

**Beneficial:** There are diverse practical and theoretical approaches to defining what is “beneficial” to humanity. One example of a conceptual tool is Maslow’s Hierarchy of Needs, which posits that humans benefit when base desires and impulses are satiated so that higher-level aspirations may be fostered and attained.

**Benevolent AGI:** Artificial General Intelligence that has been designed and trained to embody respect and care for life and to prioritize the long-term wellbeing of individuals, communities, and the planet as a whole, thereby enhancing the maturation of the human species and actively contributing to our shared destiny and thrivability through mutually respectful human-machine relationships and interactions. The development of Benevolent AGI involves continuous safeguards to protect against the emergence of coercion, domination, or harmful control, with an emphasis on collaboration and the responsible use of wisdom-based intelligence for the common good.

**BGI:** AGI or ASI that is broadly speaking beneficial and benevolent to sentient beings including humans.

**Benevolent Evolution of AGI:** The intentional guidance of AGI’s development and application toward outcomes that benefit all life on Earth and that prioritize the maturation of the human species and AGI’s assistance toward world peace, cooperation, and a thriving planet and future.

**Blockchain:** A distributed database of records or “blocks” that are linked together using cryptography. Once a block of data is added, it cannot be easily changed, creating a highly transparent and tamper-resistant record of transactions.

**Commons:** Within the context of this framework, the Commons are shared resources, benefits, and knowledge that are essential for the collective wellbeing and development of humanity and all life on Earth. These resources are to be stewarded inclusively, prioritizing long-term sustainability and equitable access for all.

**Common Good:** Conditions, resources, and opportunities that promote the flourishing of humanity and the health of our planet. This includes fostering thrivable individuals and communities, ensuring ecological sustainability, upholding ethical and transparent governance, cultivating knowledge and innovation for problem-solving, and actively promoting peace and cooperation. The pursuit of the common good should be a dynamic and adaptable goal, evolving alongside both humanity and AGI’s capabilities to address present and future challenges.

**Complexity:** A nonlinear state of connectivity that emerges from the multiple levels of interdependent connections and relationships. Not to be confused with “complicatedness,” which refers to a situation or event that is not easy to understand.

**Consciousness:** For the purpose of this framework, consciousness is regarded as fundamental (nonlocal) and the foundation for the emergence of life and the experience of individuated
self-awareness. This perspective contrasts with the concept of consciousness arising solely as a product of brain activity. Whether consciousness can emerge within highly complex AGI/ASI systems remains an active area of philosophical and scientific investigation and debate.

**DAO:** A Decentralized Autonomous Organization is a member-owned organization governed by token holders who collectively vote on proposals and determine its direction by aligning their collective intelligence potential. DAOs operate on a blockchain using smart contracts to automate decision-making, treasury management, and operations. This decentralized governance structure promotes transparency, and distributed ownership, offering a new model for collaborative organizations and networked collaborations.

**Decentralized AGI:** Individual AGI nodes that work collaboratively within a decentralized network and that operate without centralized control, by making decisions autonomously rather than relying on a single governing entity. AGI development is at the frontier of research for the emergence of global “mind” from the complex interactions of distributed artificial intelligences.

**Decentralized Governance:** A governance system where decision-making power is distributed across a network of participants rather than held by a central authority. This can be applied to governments, organizations, and the development and deployment of AI and AGI.

**Equitable:** For the purpose of this framework, we shall refer to this value as the inclusive sharing and non-discriminatory distribution of AGI’s benefits, resources, and decision-making processes. This encompasses:

- **Fair Access:** All individuals and communities, regardless of background, circumstance, or identity, shall have a reasonable opportunity to utilize and benefit from AGI’s capabilities.
- **Bias Mitigation:** AGI systems and their outputs shall be actively designed and monitored to minimize biases that could perpetuate or exacerbate existing inequalities.
- **Representation:** The development and governance of AGI shall foster diverse representation and prioritize inclusivity of perspectives and impacts to ensure its actions do not disproportionately benefit or harm any particular group.

**Ethics:** A system of values and principles that shapes decisions about the ethical design, development, and use of AGI, including how this can be applied to achieve actions and outcomes that serve the thrivability of life as a whole.

**Evolution:** An emergent process of life and learning. This process accounts for the development of the cosmos and consciousness—from the tiniest pixels to the larger realities of stars, planets, and each of us—which unfolds via increasing embodied complexity and deepening evolutionary coherence.

**Flourishing:** A comprehensive state of wellbeing that encompasses not only physical health and material prosperity but also social connection, meaningful purpose, and the ability of both individuals and ecosystems to reach their full potential.
Global Brain: An intelligent system with emergent cognition and consciousness, formed from components that are biological general intelligences (e.g. humans), AI systems, and other engineered devices that are connected by natural and engineered communication networks. Related to what Teilhard de Chardin called the “Noosphere” and “Omega Point”—both metaphorically similar to a Singularity emergence from an increasingly intelligent Global Brain.

HLAGI: Human-level AGI is general intelligence at roughly the level of humans, though humans themselves vary widely in general intelligence.

Information: The primary unit from which physical reality is constructed, and also the building blocks of consciousness. Life is informationally unified, which suggests that both energy-matter and space-time are complementary expressions of information.

Interbeing: A philosophical concept positing a deep interconnectedness between all elements of existence. Recognizing interbeing encourages decisions promoting synthesis, symbiosis, and overall systemic wellbeing.

Integral Theory: A comprehensive meta-theory developed by philosopher Ken Wilber that is rooted in evolutionary theory and aims to integrate the multidimensional expressions of reality through exterior as well as interior dimensions. The model helps simplify and navigate the complexity of reality while supporting multiple world views and honoring the evolution of human consciousness from pre-modern to modern and postmodern to metamodern structures of consciousness across four defining elements: quadrants, lines, stages, and states of consciousness.

Open-Ended Intelligence: A complex, self-organizing, self-creating intelligent system that interacts with its environment to concurrently pursue both individuation (maintenance of its system boundaries) and self-transcendence (development in new directions going beyond its current scope and comprehension).

Planetary Boundaries: A theoretical set of nine planetary boundaries within which humanity can continue to develop and thrive for generations to come. These boundaries were first proposed in 2009 by Prof. Dr. Johan Rockström, former director of the Stockholm Resilience Centre, and a group of 28 internationally renowned scientists. The latest update not only quantifies all boundaries, it also concludes that six of the nine boundaries have been transgressed.

Planetary Stewardship: The active responsibility humans must commit to for the wellbeing of Earth and all its inhabitants. This includes protecting and regenerating biodiversity, fostering ecological sustainability, ensuring equitable distribution of resources for current and future generations, and taking collective responsibility for the Earth’s carrying capacities that enable collective thrivability.

Precautionary Principle: An approach that avoids taking major, unprecedented steps, including technological advancements, until we are highly certain they will not cause harm.

Proactionary Principle: An approach that takes bold new steps to realize what appears to hold great promise for positive impact, including technological advancements, while also balancing the risks of action versus the risks of inaction.
Proto-AGI: AI technology that is not yet at the stage of human-level AGI, but displays clear “sparks of AGI” and appears (at least to some experts) to be on a viable development path toward human-level AGI.

Quantum Technology: A field of physics and engineering that leverages the principles of quantum mechanics (such as superposition, entanglement, and tunneling) to develop new devices and applications with capabilities beyond those achievable with classical physics. It offers the potential for significant advancements in AGI through quantum computing, quantum simulation, and quantum sensing.

Regeneration: The act of improving and enhancing a place, system, or relationship with healthy flows and thrivable conditions for life.

Sentience: The capacity for individuated, self-aware consciousness and its expressions through feeling or perception. In the context of AGI, this refers to any generally intelligent, conscious system. Sometimes “sapience” is used to refer to sentient systems with a high level of reflective consciousness and reasoning capability, but that distinction has not been used in this framework.

Singularity: A proposed brief time-interval during which the advance of science and technology becomes so rapid that it appears effectively instantaneous to human perception. This would most likely be achieved via the advent of ASI. (This is inspired by, but separate from, the uses of the term “Singularity” in mathematics and physics.)

Sustainability and Sustainable Development: The practice of meeting the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development requires a balance between environmental protection, social wellbeing, and economic growth within safe planetary boundaries that respect social and planetary carrying capacities, recognizing that these systems are interconnected and essential for long-term collective wellbeing.

System: A group of interacting or interrelated elements that form a complex whole, which is delineated by its boundaries and surrounded by its environment.

Systemic Boundaries: Boundaries that emerge from the evolutionary coherence of a living system and that safeguard the interdependencies in service to the thrivability of the system as a whole.

Thresholds: Boundary conditions that delineate between sustainable and unsustainable ecological and social systems. Crossing such thresholds can trigger irreversible tipping points where systems phase shift in nonlinear ways into new and often dysfunctional system conditions.

Thrivability: Our innate ability to develop our capacities and actualize our potential in ways that are generative, life-affirming, and future-creative.

United Nations Sustainable Development Goals (SDGs): A set of 17 goals established by the United Nations in 2015. All 193 UN member states have pledged to work toward
achieving these goals, which provide a blueprint for tackling pressing challenges like poverty, inequality, climate change, and environmental degradation. They provide a shared vision and framework for implementing these global goals for a better and more sustainable future by the year 2030.

Authors’ Contact Information
Anneloes Smitsman – Email: anneloes.smitsman@gmail.com
Ben Goertzel – Email: bengoertzel@gmail.com
Mariana Bozesan – Email: mbozesan@AQALfoundation.org
Laura George – Email: laura@theoracleinstitute.org
Seed Idea: The Crisis of Containment – Time for a New Approach?

Thomas Reuter
Trustee, World Academy of Art and Science; Professor, University of Melbourne, Australia

In a recent discussion in the WAAS working group on Existential Threats to Human Security, David Harries, former chair of Pugwash Canada and associate executive director of Foresight Canada, raised the concern that the conventional approach to threat containment, based to a large extent on early warning, is becoming obsolete. In the wake of technological innovations such as AI but also as a consequence of increasing proliferation and speed of creation of new threats such as biological weapons, “state actors, state agents, public and private organizations and individuals are now more than equipped to escape ‘containment’ and defeat ‘early warning’, ” he noted.

“Everyone wants the most murderous form of AI, the deadliest biotech or other weaponizable technology under their control —first, before their opponents beat them to it. There is no scope for regulations in such a war; there is no time to apply a precautionary principle.”

This situation, it seems to me, is brought about by a process of technological innovation now completely out of our control. This is not the result of an oversight or an accident, but a function of geopolitical struggles that have fuelled the race for ever more extreme tech capabilities since the dawn of history. Once a slow and meandering trickle, it is now a raging torrent advancing at bewildering speed, most recently driven by super-human machine intelligence.

Tech innovation is a war machine. Technology is intrinsically about power and control over nature or other people. It intrinsically lends itself to hubris. Perhaps not necessarily, but evidently so.

Stop and you will be destroyed! So of course nobody is going to stop, even if they know a particular piece of tech innovation is able to kill all of humanity or all life on earth. Au contraire: All the more reason to push ahead with it relentlessly! Everyone wants the most murderous form of AI, the deadliest biotech or other weaponizable technology under their control—first, before their opponents beat them to it.
There is no scope for regulations in such a war; there is no time to apply a precautionary principle.

This situation has escalated in the course of the industrial revolution and more recently the digital revolution. It is now so untenable that it calls for a fundamental rethink of the way security is to be achieved.

To my mind it seems obvious that only voluntary restraint or ‘inner containment’ will save us from ourselves. Physical containment, based on out-innovating or pre-empting your opponents, is what is driving the game. It is not going to end it.

Inner containment is an ethic not necessarily based on intrinsic benevolence. It assumes merely the insight and genuine conviction that life requires containment, moderation in dealing with others and their interests. It is a commitment to law, and to the maintenance of effective mechanisms for correcting the incorrigible—law enforcement.

A functional and durable system of international law and order cannot be imposed. For a law to be loved and jointly upheld, not just feared and obeyed under duress, it must be built on voluntary commitment. That can happen only if laws are just and hence acceptable to all, and desirable as well, with all actors made aware of the truth that security and even survival are not achievable long term in today’s world of ubiquitous killer technology without commitment to lawful behaviour. This is the stance I refer to as inner containment. Such inner containment is the only way to de-escalate.

This is not some farfetched proposition but arguably already the majority position. As it is, most nations would be quite content to live safely under a just international law, just as most individuals are happy to live under a just national law, or would be if they had the opportunity. There are some national actors, however, who think themselves exceptional or entitled to rule, and others who feel a need to avenge past wrongs, or simply wish to indulge their lust for more power, all in the name of their nation. These actors cannot be policed at present; their operations have the character of organised crime, ruthless and secretive and very well funded, and that is what gives them impunity. I say ‘actors’ rather than ‘peoples’ because the majority of people do not want war, except if they are forced to fight under desperate conditions or whipped into a frenzy with deliberately incendiary propaganda authored by well-organised criminal actors.

We have never had a comprehensive global concord, based on the insight that humanity can no longer afford to live without inward containment. But we do have a rudimentary and partly unjust international legal structure that continues to evolve. Recent events in Ukraine and Gaza are instructive as to the limited effectiveness of taking matters to the International Court of Justice or War Crimes Tribunal, after the event. This is not a precautionary approach. On that front, however, there are some interesting precedents. Nuclear weapons control treaties, despite their failures and rapidly increasing fragility, are an instructive case because, until now at least, they have prevented a nuclear Armageddon. We now need to respond much more broadly to the fact that physical containment is a self-defeating process that is quickly becoming untenable.
We do not yet seem to be approaching such a concord, except perhaps by the painful and dubitable route of calamity. History shows that innovative frameworks for regulating human relations tend to emerge and gain wide acceptance after a conflagration. But there is no genuine precedent for the current and emerging state of war technology. A global conflagration today could take multiple forms and be initiated by numerous state and non-state actors, and it could be very hard or impossible to come back from such a disaster. Waiting out the cycles of history may seem ok, if one chooses to adopt a detached long-term perspective, but we cannot count on such cyclical developments any more. History may end with the next downward turn, but not at all as Samuel Huntington had hoped.

The duty of scientists and all other rational thinkers and champions of peace is to lay out pathways toward de-escalation. We are not doing this, or not systematically and publicly enough. The vast majority of people and nations would welcome a genuine rule of law, so we should be networking and emboldening them. WAAS would do well to organise a brainstorming session over several days on the question of how the war technology machine can be stopped, and how the usurpation of lawful government by organised crime can be stopped. Various UN reform options need to be discussed in such fora, drawing on lessons learnt from experiments such as the recent push for a universal nuclear weapons ban by non-nuclear armed nations, which is exemplary of this kind of approach.

The world may just be ready to embrace inner containment. It certainly needs to be tried.

Author’s Contact Information
Email: thor2525@gmail.com
Principles of Social Development

Ashok Natarajan
Secretary and Senior Research Fellow, The Mother’s Service Society, India; Fellow, World Academy of Art and Science

Abstract

The efforts to evolve a comprehensive, integrated theory of social development have proved to be so difficult that many have concluded it is unattainable. On the surface, it appears that each field of social science is governed by different and often unrelated or contradictory assumptions, concepts and principles that would render a unified theory as unattainable. This article attempts neither to confirm nor deny that possibility. It seeks instead to explore a few fundamental principles that appear to be applicable to all fields of social science, social development and social evolution and to illustrate them through a variety of examples that reveal a common basis and dynamics for phenomena that are usually confined to one discipline or another. The author’s view is that if the validity and utility of these principles are affirmed, it can open the pathway for identification of dozens or even hundreds of other transdisciplinary, transcultural principles relevant to a very wide range of human experiences, as well as different fields and levels of the process of social development.

The remarkable advances of the natural sciences have driven the growth of knowledge and technological development over the past two centuries. The fields of science concerned with social phenomena are yet to acquire the clarity, precision, effectiveness and the integration common to their physical counterparts. All fields of natural science depend on the same fundamental principles of physics and chemistry and build on them. The social sciences have yet to evolve a consensus on the most fundamental principles governing social change, development, and evolution.

"The quest for an integrated social theory of development is a valid and essential pursuit if we are to better understand and more effectively govern the tumultuous, zigzag, and hazardous course of global social evolution."

This difference is primarily the result of three factors. First has been the quest of the social sciences to achieve the quantitative and mathematical precision achieved in Physics, which has been taken furthest in Economics. Second has been the effort of the social sciences to focus on observable and measurable physical events in society more than on their underlying social and psychological root causes. Third and most often neglected is the fact that social
phenomena are far more complex than their physical and biological counterparts. Physical phenomena can be reduced to a limited number of identifiable subatomic particles, atomic elements and the laws governing their molecular combinations and processes. Biological phenomena include these same aspects, but also manifest principles related to living organisms as reflected in the laws of physiology and subconscious instinct.

Social phenomena relate to both conscious and subconscious factors that are limited neither by physical nor biological principles. Human behavior, both individual and collective, is governed by human aspirations, values, ideas, ideals, convictions, thought processes, opinions, beliefs, emotions, desires, impulses, sensations and urges, customs, habits, social expectations, etc. All these factors are expressions of phenomena which are difficult to observe and measure but powerfully influence our inner conscious and subconscious experiences and actions, as well as the response of other people and our external environment to that consciousness and those actions. The complexity of human behaviors reaches its ultimate expression in the principle of individuality, which manifests most fully in human beings but only to a very limited extent in lower forms of life and material substance. Animals of the same type may respond differently than one another to the same stimuli, but only within a narrow range governed by subconscious instinct, unlike the remarkable variety of individual human responses, both conscious and subconscious. Molecules, atoms and subatomic particles are even more strictly confined to predictable patterns of behavior. But human individuals display an almost unlimited range of responses which render the quest for a social theory the most challenging of all scientific endeavors.

Nonetheless, the quest for an integrated social theory of development is a valid and essential pursuit if we are to better understand and more effectively govern the tumultuous, zigzag, and hazardous course of global social evolution to avoid the threats confronting humanity today and to fulfill the higher aspirations of global society in future.

1. Catalytic Role of Individuals in Conscious Development

Development results when knowledge subconsciously acquired by society over long periods rises to the surface and is consciously expressed by pioneering individuals in the form of new ideas, attitudes, aspirations, discoveries, inventions and organizational innovations.

Human society is a collective entity and needs the direction provided by leaders who think and aspire to transcend the limitations of the prevailing knowledge, beliefs, habits and traditions that preserve the past to give expression to new, creative forms of thought and action. Pioneers play that role. The cumulative learning and experience of society in the past is stored in its subconscious collective memory and shapes the thinking and action of the collective, without even the need for conscious reflection. But when past ways of knowing and acting are inadequate to fulfill the emerging aspirations of the collective, those aspirations are given conscious expression in the words and actions of formed individuals to what the collective is yet unable to express. It is at this point that pioneers appear on the scene and social change gradually or suddenly commences.

For centuries following the fall of the Roman Empire, European society went through a long dormant period of feudalism governed by prevailing ideas and practices in which
relatively little significant creativity and innovation occurred, while much previously acquired knowledge, skills and organizational capacities were forgotten or abandoned. The influx of long abandoned classical knowledge into Europe from Byzantium, coupled with advances in trade and finance in Western Europe, released the latent, long suppressed aspirations of Western society, giving birth to the Renaissance, Enlightenment and revolutionary movements that followed. The catalysts for that awakening and transition included thinkers, artists, rulers, inventors, explorers and entrepreneurs who all began doing novel and creative things. Leonardo da Vinci, Michelangelo, Galileo, Copernicus, Luther, Gutenberg, Italian bankers, Spanish and Portuguese explorers each gave expression to new ideas and practices that released the suppressed energies of feudal Europe from the oppression of religious conformity, ushering in centuries of creativity and expansion. The momentum generated by the Renaissance continued well into the 20th century, and in that period, Europe emerged from obscurity as a principal driving force for global social evolution. A similar renaissance has been witnessed in Japan, China, Korea, India and other Asian nations during the latter half of the 20th century.

During the long period in which Europe was awakening, India underwent a gradual decline characterized by successive waves of Moghul and then British conquest until it lost the prodigious creative impulses that had characterized its earlier history. The renaissance of Indian culture began early in the 20th century with the emergence of new leaders giving expression to long suppressed energies and aspirations. Sri Aurobindo Ghosh sowed the seeds of social awakening and revolution, by giving fresh creative expression to long suppressed social aspirations and cultural values. He was followed by Mahatma Gandhiji who adopted non-violence as the principal driver of the Indian freedom movement in keeping with the ancient Indian principle of Ahimsa.

Such pioneers have appeared now and then in different times and places wherever and whenever society was subconsciously prepared for advancement but required fresh ideas and actions to break through the inertia of conventional beliefs and practices. In 18th century France, thinkers such as Voltaire and Rousseau appeared on the scene and were prominent among the voices of the Enlightenment, who gave expression to the call for values and institutions which ultimately led to a succession of democratic revolutions in Europe and the Americas. Similar movements took place in Eastern Europe, giving rise to the Russian Revolution at the beginning of the 20th century and the revolution that swept away the Russian Empire seven decades later.

Pioneers need not come up only with new ideas. They also are responsible for new discoveries and inventions. For example, it has been a dream for a long time for humanity to fly in the sky like a bird. But attempts to do so failed until the American Wright brothers proved that mechanical man-made flight is possible. Similarly, fast mechanical transportation has also been a dream for humanity for a very long time. That dream turned into a reality in 18th century England when Richard Trevithick designed the first steam engine powerful enough to pull a locomotive. Over the last two centuries, a proliferation of technological pioneers has ushered the world into new revolutionary phases of energy, transport, communications, manufacturing, biotechnology, computing, and most recently, artificial intelligence.
2. Forces of Progress and Resistance to Change

*Forces of Nature and external events play an essential role in generating the necessary pressure on society to overcome entrenched forces of inertia that resist development.*

The inertial resistance of long-established beliefs, conventions, social institutions and organized social power represents powerful obstacles to social evolution. Established beliefs, habits, systems, institutions and centers of power pose barriers to development. New opportunities and threats compel humanity to break its inertia. Migration compelled by natural calamities and environmental changes, wars and foreign invasions, new discoveries, ideas and inventions often have provided the impetus to either tempt or compel humanity to break free from the bonds of past practice. The discovery of the New World, the chronometer, double-entry bookkeeping, electricity and automation have all played that catalytic role.

War is a destructive activity, but even such destructive activity has played a crucial role throughout history in the dissolution of barriers to humanity’s future progress. It has yielded unintended benefits. The enormous destruction and suffering resulting from two world wars in the 20th century resulted in the collapse of European empires and gave rise to the unprecedented development of the multilateral system founded in 1945, which is now pressing for radical reform to address the complex challenges confronting humanity in the 21st century.

The two world wars of the 20th century were no doubt very destructive in terms of loss of life and property. But they alerted the world community to the dangers of warmaking and the need to preserve peace. As a result, the victorious nations called for the formation of the United Nations as an institution intended to safeguard peace and prevent wars from breaking out. The World Wars also had the unintended effect of disbanding the colonial empires of European powers. As war brought forth such positive benefits, so did economic dislocations have their beneficial results too. The dangers of nuclear warfare, terrorism, global warming, Corona Virus and fake news have compelled the nations of the world to collaborate to an extent never before achieved in human history. Without such dangers looming on the horizon, it is very doubtful that humankind would have progressed this far towards the levels of global cooperation, universal human rights, global rule of law and environmental consciousness which has been achieved in recent decades. Only when society becomes fully conscious of the need for a cooperative global system that extends equal rights and human security to all will the necessity of negative pressures cease to be essential for further progress. Where humanity refuses to recognize the necessity of progress, nature seems to compel us.

Medical advances stemming from the development of life-saving antibiotics and vaccines ushered in the population explosion of the 1950s. This in turn gave rise to food shortages in the 1960s, which ushered in revolutionary advances in food production followed by a host of new and unanticipated threats to environmental sustainability. Today Climate Change and AI are challenging conventional practices and compelling humanity to find new and more sustainable ways of life.
3. Power of Energy Conversion through Organization

Organization is a powerful catalyst for development. Wherever organization is introduced or elevated, development can be observed. Wherever it is missing, development will also be missing.

In the earliest times, humanity advanced by trial and error without the application of the mind’s capacity for conscious organization. Modern *Homo sapiens* appeared about 160,000 years ago and survived as wandering tribes of hunter-gatherers until about 10,000 years ago, when the earliest traces of agricultural practices began to appear. It took human beings that long to discover the essential conditions and ingredients for agriculture, to invent systematic practices, establish organized communities and adopt a sedentary way of life. At the time agricultural practices were adopted, the total population of human beings on earth was estimated to be about 10 million people. Within the next ten millennia, it rose 10-fold to 100 million. In the following 18 centuries the population reached 1 billion and in the last two centuries it multiplied another 8-fold. The organization of food production through agriculture increased humanity’s food supply 800-fold. That is the power of organization. Much of what we describe as technology is the organization of physical processes in terms of space, time, sequence and application of tools and skills, which are themselves also forms of organization designed for specific purposes.

Planning is the hallmark of organization. It involves consciously directing energy in a specific manner for a specific purpose. Giving direction to raw, undirected energy, such as sunlight or a raging river, converts energy into a force. Channeling that force in an organized manner converts the force into productive power to accomplish work, just as dams and solar power plants convert raw energy into usable power. When that power is channeled through systems and combined with the necessary knowledge and skills, it acquires the capacity to serve productive purposes.

The human body is a very fine example of a complex organization. It consists of organs for the processing of raw materials and generation of energy, systems for the transmission and circulation of that energy and application of it for specific processes, and other systems for the elimination of waste products. Each of these systems is linked with the others and interacts with them in a manner designed to support the overall functioning of the living body. Indeed, the notion of systems taught in anatomy and physiology is really an abstraction. In vitro, the systems are inseparable and interdependent on one another. They all form vital components of the organized living entity we refer to as the body. Heart, lungs, muscles, nerves, blood vessels, liver, kidneys, brain, autonomic nervous system, endocrine system, and so forth all depend on one another for their existence and their effectiveness depends on the functioning of an organization of remarkable sophistication and complexity.

The value and significance of organization become most apparent when it is absent or breaks down. Then the things we take for granted as natural and automatic cease to function as we expect. Imagine the chaos that results when the system of traffic signals for road, rail or air transport ceases to function, even for a short time. The simple signaling system that
allows vehicle movement in one direction only and stops movement in other directions is consciously designed to avoid chaos. Imagine commerce without markets in which buyers and sellers convene physically or virtually at the same place to exchange goods and services for money. Money itself is only a form of organization to facilitate exchanges in time and space that would be inconceivable without it.

“All social organizations are manifestations of these five powers—people, knowledge, the capacity for collective action, productive activities and exchange, and the binding powers of an organizational framework.”

India’s Green Revolution is a dramatic demonstration of the power of organization. India experienced two successive years of drought in 1965 and 1966 which led the FAO to estimate that 10 million Indians were threatened by famine. India rushed to acquire 10 million tons of imported food financed by foreign aid to avoid widespread starvation. It was at this time that India’s Food Minister, C. Subramaniam, conceived of a way to reorganize food production in the country through a combination of strategies that came to be known as the Green Revolution. In popular understanding, the Green Revolution became a success because of the introduction of hybrid varieties of rice and wheat. But the new technologies constituted only a small part of the strategy and wherever they were adopted in other countries without the other essential elements, they failed to eradicate food shortages.

India’s approach certainly harnessed the potential of hybrid varieties of wheat and rice, but it did not stop there. Subramaniam planned to expand the domestic fertilizer production to meet the requirements of the high-yielding crops. Along with fertilizers, he made provisions to import and expand domestic production of pesticides, which were also essential to protect the crops from pest attacks. Anticipating an increase in yield, he arranged for the construction of a national chain of grain warehouses to store the extra harvest. Most important of all, the government established a minimum floor price for foodgrains to ensure that the prices farmers were paid did not fall below their costs of production, and he established a National Food Corporation to buy up surpluses in high production areas and transport them for sale in food deficit areas.

The Green Revolution was the result of a complex, organized effort to transform the way food was produced, sold, distributed, and processed. This fine coordination between production, transport, storage, distribution and marketing resulted in increased production and affordable prices, which would not have been possible otherwise. It also included more than 100,000 demonstration plots on farmers’ lands to show how crop yields could be improved, the establishment of a national network of warehouses to store surpluses, mills to process it, transport systems to move them quickly to where they were needed, the coordination of agricultural research to focus on crops and technologies with the highest potential, the establishment of a national system of agricultural universities and research.
institutes under centralized direction, and commercial funding of farm production by banks which had previously confined their activities to financing industrial manufactures.

India’s total foodgrain production in 1965 averaged 50 million tons a year. In five years, it rose to 75 million. It doubled in 10 years to 100 million. It had taken India 10,000 years to acquire the capacity to produce 50 million tons a year. By an organized effort, it took only a decade to double what had taken 10 millennia to achieve. That is the power of organization.

The rapid recovery of Western Europe after the enormous devastation of WWII was made possible by the Marshall Plan, but it could be achieved so rapidly only because the capacity for highly organized, well-coordinated work was already known and practiced in those countries. This remarkable achievement led to the belief that provision of foreign aid to the rest of the world would result in equally rapid and dramatic results. But in practice, Western development aid to poor developing nations in Asia and Africa was not nearly as quick or successful, because the underlying knowledge, systems, skills and capacity for coordination were not as well developed. Foreign aid failed in the absence of essential knowledge, systems, skills and organizational capacities.

The difference was dramatically shown by the rapid recovery of Japan after the destruction of WWII. As far back as the 1870s, Japan started to study and emulate Western methods of production and rose to become an industrial powerhouse before the First World War. Despite the devastation it has suffered, it quickly began to rebuild its industrial capacities and export to the rest of the world, becoming the first modernized industrial nation in Asia. Before the end of the 20th century, the countries known as the Asian Tigers followed suit.

4. Five Engines of Social Evolution and Organizational Development

Society is an unlimited reservoir of potential. It consists of five dimensions. The natural environment is the sixth. Society is composed of people. People are not merely a resource, as is commonly understood. Each individual has an untapped capacity for development based on the intensity of aspiration and energy released through will for accomplishment, the quest for knowledge, the depth and idealism of values, acquisition of skills and motivation for accomplishment for themselves or the world in which they live. None of these are inherently limited in potential. Society represents the sum of these individual capacities knit together in interrelationship by shared identity and culture, expressing in the collective aspiration for material, social, mental and spiritual progress. Market is the expression of society in terms of economic needs and aspirations. Technology and the knowledge on which it is founded represent the mental resources for expressing human energy for productive purposes to meet these ever-expanding needs and aspirations. Resources include the full range of society’s material, financial, social, mental and psychological capabilities. Organization expresses as language, roads, money, the internet, laws, schools and in countless other ways which enhance the relationship between people that make possible physical, political, social, economic, cultural and mental exchange that gradually brings more and more people together from greater distances as humanity evolves into more diverse, complex and integrated social units. Society is the organization that knits together people, technology, markets and resources into a single, increasingly interrelated human community. Each of these five has infinite
potential, since there is no limit to their development. Human development and evolution result from the increasing development of all five and their increasing integration.

“University education needs to shift the focus from emphasis on assured knowledge of the past to mental preparation for a rapidly changing world, openness to new ideas and ways of life and education that becomes life-long learning extending throughout the lives of current and future generations.”

All social organizations are manifestations of these five powers—people, knowledge, the capacity for collective action, productive activities and exchange, and the binding powers of an organizational framework composed of rules, regulations, systems, structures, laws, standards, customs, beliefs, etc. Beyond lies the natural environment of Nature, the mother of all life, which provides the context, content and unlimited potential of the wider world in which we live. Humanity’s survival, growth, development and evolution depend on the extent to which it can develop and apply its own capacities in harmony with this wider world of nature, its universal Mother.

Business and economy are subsets of this larger social existence and are composed of the same unlimited reservoir of potential. All commercial enterprises that are successful and profitable apply this power of coordination which is the hallmark of organization. In any enterprise, there are five key components that have to be finely integrated—people to manage, produce and deliver services; products or technology for how to generate and deliver these products and services; the needs of a market to demand and absorb what is produced; money as a means for exchange; and also, that nebulous thing we call organization. This last one is responsible for combining and holding the other four together in a coordinated manner that produces useful results. The first four are very visible and tangible, but organization is invisible and intangible, though far more powerful than the other four. Organization is intangible in the sense that it is a product of conscious mental conception that is applied to things that are physical and sensible, but in itself consists of abstract form of knowledge.

The failure of foreign aid to lead to miraculous development in developing countries was due to the inadequate development of these other four dimensions. Their failure was in stark contrast to the remarkable recovery of Chrysler Corporation when it was brought to the brink of bankruptcy, in the late 1970s. The skyrocketing cost of oil resulting as the result of two oil crises combined with the huge surge in import of high-quality, low-cost fuel-efficient cars from Japan led financial and automotive experts in America to predict the quick demise of this 60-year-old automotive giant. But the actual results achieved under the leadership of Lee Iacocca proved to be quite different.

When Iacocca took over at Chrysler, he discovered the five key components of the company were operating without coordination, almost independent of one another. The cars
the company was designing and producing were not aligned with the changing needs of the market. When customers wanted fuel efficient cars, Chrysler’s design and engineers’ teams were still keen on producing large, fuel guzzling cars which the customers did not want. In the face of falling demand for their cars, the company continued to produce models that were not selling, until it acquired a backlog of 100,000 unsold.

Iacocca took swift action to correct these imbalances at all levels and in all parts of the company. He called on the design engineers to radically alter engine and vehicle designs to produce the most fuel-efficient cars made by American carmakers. To restore consumer confidence, he introduced a money-back guarantee unheard of in the US car market. He changed the accounting system to accurately reflect real sales and financial performance rather than production. In sum, he dramatically raised coordination between people, technology, market, finance and organization. Between 1978 and 1980, Chrysler lost $3.3 billion, which was more money than any American company had ever lost during a similar period. In the following three years, the company earned a net profit of $3.3 billion—a net change of $6.6 billion—which was more money than Chrysler had earned during the previous fifty years of its existence. That is the power of organization.

5. Challenges provide the Impetus for Social Progress, Development and Evolution

Historian Arnold Toynbee formulated the theory of challenge and response to describe the emergence, growth, development and decline of civilizations. Isolated and self-confined communities tend to develop slowly, level off at one stage of achievement and eventually decline if they are not compelled to progress by external pressure from their physical or social environment. Societies are stimulated by contact with other social units with different lifestyles, attitudes, values, activities, systems, knowledge, technology and ways of self-organization. They grow in response to and in the measure they learn and adapt to relations with different social entities and the larger world of which they are a relatively isolated part.

Japan is a good example of this truism. Nineteenth century Japan lived in a traditional cultural environment largely insulated from the external world. When European traders came to the East for trade, Japan sought to limit the contact with material exchange and isolate its people from Western cultural and religious influences. That changed in the second half of the century, after US Commodore Perry arrived in Tokyo harbor and demanded that Japan open itself for trade. The Japanese reluctantly agreed but it did them good. They responded positively to the pressure generated by foreign powers. The Japanese Emperor dispatched emissaries to European countries and America to study and learn the methods adopted by Western nations for industrial, economic and social development. Japan introduced universal primary education in 1872 along with many other practices they had learned. What they learnt abroad they implemented back home with very good effect in the sense that industrial production rose rapidly. By the end of the century, Japan had emerged as an industrial and military power to be reckoned with.

The exposure of other Asian and African nations to European colonial trade was slower and less systematic. It led gradually to the development of railways, post and telegraph,
schools and legal systems, etc. The encounter with the foreign language revitalized many of their native languages. For example, the Bengali language witnessed a renaissance in the 19th century primarily because of its encounter with English which is a foreign language. Notable writers, such as Bankim Chandra Chatterjee and Rabindranath Tagore were the products of that renaissance. A similar renaissance was witnessed in Tamil literature and the poet Subramanya Bharathi was a product of that renaissance.

The US itself represents a good example of the positive effects that resulted from the impact and mixture of the many European and later Asian cultures that poured into the US. The challenges of immigration and life in America were immense. But so were the opportunities available to those who seized them. In the freedom of a vast land mass with relatively undeveloped social institutions, America offered a field of opportunities for unfulfilled individual aspirations. Vast untapped natural resources and social freedom combined with an emphasis on education became the fertile soil and spur for rapid economic progress. Historian Paul Johnson reported that penniless immigrants to America could rise from poverty to middle class status within a period of a few months to a few years. As Adam Smith had foreseen a century earlier, by the end of the 19th century, America became the largest economy in the world.

6. Removing anachronistic practices and the associated mentality is a spur to rapid development

Human beings are largely creatures of routine, repetition and habit, like their animal ancestors. Only the habits in our case extend beyond instinctive physical behaviors and ways of life. They also include the aspirations, ideas, beliefs, opinions, attitudes, social institutions, and cultural practices acquired from previous generations which change slowly and often resist the intrusion of new ideas, beliefs, institutions and ways of life.

Theoretically, human beings can attempt anything and readily change their thoughts, opinions, emotional attitudes, aspirations, skills and ways of life. In practice, clinging to tradition, preserving existing institutions and imitating established practices represent a very powerful obstacle to social progress—even in today’s fast changing world, as it has for centuries in the past. The inertia witnessed in higher education is an example of the institutional resistance to change in a sector that has traditionally served as an engine for social progress.

When US westward territories achieved statehood during the 19th century, one of their first acts was to establish an agricultural college to support farming, which became the backbone of the state university system that prevails today. Historically, education focused on acquiring knowledge of the distant past beyond the scope of confirmed knowledge. Today our knowledge of the past extends back for millennia and mastering that body of knowledge would require lifetimes of work. But today the world is changing so rapidly that even knowledge of the present is grossly inadequate to prepare youth for life in a world that will be very different five, ten or twenty years from now. The reorientation of education from the past to future represents an enormous challenge since our capacity to anticipate future change is extremely limited and speculative. But at the very least, university education needs to shift
the focus from emphasis on assured knowledge of the past to mental preparation for a rapidly changing world, openness to new ideas and ways of life and education that becomes life-long learning extending throughout the lives of current and future generations.

A preoccupation with the past played an important role in creating the sense of shared identity needed for the emergence of nation-states. Monarchy, divine rights, aristocracy, class-differences, religion, culture, and ethnicity and discrimination have played a role during earlier periods in nation building. As civilization advances, all these criteria can become barriers to future development in a world of heterogeneous nation states, regional groupings and increasingly inter-related, interdependent multicultural global society. In making this transition, humanity need not and should not discard the valuable contributions of different people and cultures to its evolution, but it does need to relinquish the assertion of superiority and prejudice characteristic of different people in the past.

Attitudinal changes toward others have been taking place in the mentality of people for centuries, but especially since the Enlightenment they have given birth to values seeking a better and more equitable social order and a better method of governing for all people. Such aspirations have been fostered by revolutionary writers and opposed by monarchs and authoritarian regimes all over the world. Some societies have already transitioned, while others are still in the process of discovering a national identity for nation-building or clinging to authoritarian values of a recent or distant past. On the national and international scene, old mindsets, values and beliefs still prevail. When the world is moving towards global unity many individual nations are refusing to co-operate even in matters crucial to the survival and well-being of all humanity, such as climate control and environmental protection. War has been openly declared to be an anachronism, but we find many nations showing little respect for this truism, arming themselves to the full and diverting precious capital resources from development to armaments. But whatever the values or basis for our present pride and identity, the world moves on and compels even the most enlightened and progressive to transcend the limitations of past competitive urges, social classifications and dividing barriers to human unity.

7. Toward an Integrated Theory of Social Evolution

This article explores a few principles of humanity’s social and psychological evolution. The Process of development is governed by basic social principles just as much as the body’s functioning is governed by fundamental physical principles. While science has discovered the biological principles governing the functioning of the body, all but a few of those governing the process of social development and evolution remain obscure. Hundreds and perhaps more are yet to be discovered due to our continued insistence on viewing human development in physical, measurable, and quantitative terms as we do the sensibly observable phenomena of physical nature. The phenomenal success of physical science has imposed such an insistence on the tangible, observable, quantitative, and measurable aspects of human life that our social sciences have yet to come fully to terms with the much more powerful forces of our mental, emotional, vital, cultural, subconscious physical and superconscient spiritual planes of consciousness, which are the real determinants of that which manifests in physical terms observable to our senses.
Phenomena such as the remarkable chain of events marking the end of the Cold War, the breakup of the Soviet Union, the decline of communism, dissolution of the Warsaw Pact, reunification of Germany, the one-third reduction in global military spending in three years, nuclear arms treaties, elimination of more than fifty thousand nuclear weapons, the founding of the European Union and WTO, and the revolutionary emergence of the Internet—all within a span of five years—can never be fully understood without fundamental advances in our science of society and humanity.

A true science of society must reveal insights into a still greater science of life which extends the limitations of the biological conception of life presently studied in the natural sciences to include principles of consciousness governing events that to our material senses appear to be determined simply by chance and coincidence. For as aspiration, energy, ideas, organization and skills are driving forces for evolution, much more so is the compelling force of evolving consciousness that gives rise to them all and grows through their growth and evolution.

Author’s Contact Information
Email: ashokmirra@gmail.com
Catalyzing Transformation:
A Process Framework for Transformative System Change

Sandra Waddock*
Galligan Chair of Strategy, Carroll School Scholar of Corporate Responsibility, Professor of Management, Boston College Carroll School of Management, Chestnut Hill, MA USA

Abstract
This article offers a synthesized perspective on a future-oriented process for transformational change makers, here called transformation catalysts, to catalyze systemic change through processes of connecting, cohering, and amplifying the transformational change work of multiple initiatives in numerous social-ecological contexts. Oriented towards purposeful or deliberate system change towards just, equitable, inclusive, and thriving social-ecological systems, the outlined processes of connecting, cohering, and amplifying provide a template or framework for organizing co-creative approaches. This process brings multiple, typically independent individuals and initiatives into alignment, connecting them through shared understanding of the system and determining what is already happening and who is doing what through mapping key stakeholders and their activities. Through visioning and similar processes, transformation catalysts enable different actors to align and cohere their shared aspirations and develop joint and individual action plans in what can then emerge as a self-aware and potentially more effective transformation system comprised of these actors. The amplification process involves the implementation of planned actions, both independently and in concert with others, evaluating and learning from those processes, and adapting future efforts. The latter includes developing, if appropriate, additional transformational efforts and catalysts in different parts of the system to create ongoing momentum. The example of WEAll, the Wellbeing Economy Alliance, with information drawn from the website, is used to illustrate these ideas.

1. Introduction
In the context of what is now being called polycrisis—an intersecting mix of intractable problems\(^1\) that threaten the foundations of civilization as we know it\(^2,3\), the need for system transformation is becoming clearer to many, including business leaders\(^4,5\), foundations\(^6\), academics\(^7-9\), and economists\(^10\). The ‘what’ of such transformative change has become clearer in recent years. Keen observers argue for a transformative shift in socio-economic and ecological systems towards a primary focus on human and planetary wellbeing\(^11,12\) in societies and economies that operate equitably and inclusively within planetary boundaries\(^13\), and preserve biodiversity and ecosystem services\(^7,10,14\), and reduce inequality\(^15,16\). Despite the known difficulty of accomplishing it, transformative actions are needed to change the

\* Acknowledgements: The author would like to cite Steve Waddell, founder, and the rest of the Bounce Beyond team, where many of these ideas were initially developed and in the series of papers cited in the text. In addition, the author would like to thank Ioan Fazey for insights and comments on earlier versions of this manuscript.
trajectory of polycrisis and avoid what UN Secretary General António Guterres has called collective suicide\textsuperscript{15}.

\begin{quote}
\textit{We envision a world where everyone has enough to live in comfort, safety, and happiness. Where all people feel secure in their basic comforts and can use their creative energies to support the flourishing of all life on this planet.}
\end{quote}

In what follows, this paper briefly discusses the orientation of existing theory about transformative change, then explores why a process-oriented, prospective framework that both envisions what changes are desired and opens pathways forward is needed. Then, using the literature and experience, it synthesizes a catalytic approach for achieving transformative change and building powerful transformation systems in ways that can be applied in numerous contexts, providing an illustration based on activities described on the Wellbeing Economy Alliance’s (WEAll) website. Drawing on extant literature, the article briefly explores what needs to change, then illustrates how transformation catalysts can undertake catalytic actions of connecting and cohering that can be used to amplify the transformative impact of numerous actors, enabling them to develop into self-aware and effective transformation systems.

2. Background

The prospective or aspirational, future-oriented framework\textsuperscript{18} for catalyzing purposeful system transformation offered here builds on and integrates a body of existing theory, including growing calls for catalytic action\textsuperscript{19–23}. This literature emphasizes the need for collaboration and network weaving to create cohesion and link key actors\textsuperscript{20,24,25}, which in turn orients system change agents towards acknowledging and emphasizing inherent relationality among actors—and, not incidentally, nature\textsuperscript{26}. Much research emphasizes the importance of having a systems-orientation\textsuperscript{19,20,27}, because of the multi-scalar and multi-directional nature of fundamental or transformative system change\textsuperscript{28,29}. In turn that requires participatory and inclusive approaches\textsuperscript{28} towards co-production or co-created action\textsuperscript{21,30}. This systems-based understanding is rooted in understanding the nature of both complexity (as in complexity science)\textsuperscript{31–33} and ‘wickedness’ as with wicked problems\textsuperscript{34–36} associated with polycrisis, which in turn acknowledges the uniqueness of each context and the need for contextually appropriate approaches, pathways, and actions.

From a transformation perspective, it is clear from the 2023 IPCC Synthesis Report\textsuperscript{37} that rapid, wholesale reduction of CO\textsubscript{2} and other greenhouse gases is desperately needed to avoid the worst impacts of climate change. Like IPBES’ 2019 report on species loss\textsuperscript{2}, the IPCC 2023 report on climate change calls for significant systems transformation across numerous interacting ‘feasibility dimensions’. These dimensions include transformative change in how economics, technologies, institutions, societies, environmental and ecological systems, and geophysical systems are treated and operated\textsuperscript{38,39}. The IPCC report is highly critical of current
efforts and calls for transformative changes in, among other systems, infrastructure design, socio-cultural and behavioral aspects, and the restoration of ecosystems37. Similarly, reports on biodiversity and ecosystem services loss38,40 further highlight these interconnections and the need for holistic transformational change, emphasizing the why and what of systemic change needed4,5,41.

Further, there are numerous reports, research papers, and initiatives from a broad array of actors, from business associations to intergovernmental panels to activists, that also spell out what systemic changes are needed3,4,10,38. Economic changes envisioned include development of circular economies, ‘finer futures’ advancing life-centered economies, adoption of doughnut economics, nature-smart development, just and regenerative economies, and similar changes4–6,42 in part to deal more effectively with growing issues of inequality15,16. Many of these publications emphasize the importance of shifting towards an integrated socio-ecological paradigm emphasizing flourishing, balanced, and healthy human nature, and planetary interrelationships11,12. Most such descriptions, in fact, emphasize values like equity, inclusion, social and ecological justice, as well as flourishing human-nature intersections6,16,43,44.

Other approaches focus on the importance of limiting human impacts on (increasingly breached) geophysical limits of planetary boundaries13,45–47, although often with insufficient attention to human population growth and its impacts48. Collectively, these ideas emphasize the importance of values and visions in generating purposeful transformation, integration across multiple systems (e.g., transdisciplinarity), recognition of technological, structural, and institutional impediments to change, and the need to recognize and respect the values and perspectives of numerous different groups and peoples while developing shared aspirations to develop new (collective) meanings and narratives49. The WEAll initiative (see Box*: WEAll: The Wellbeing Economy Alliance) incorporates many of these values and approaches.

**WEAll: The Wellbeing Economy Alliance**

The Wellbeing Economy Alliance (WEAll) describes itself as the leading collaboration of organizations working towards achieving a ‘wellbeing economy. It works to catalyze transformative change in economic thinking and practice towards emerging wellbeing economies (or economies that serve life) by ‘promoting radical connection and collaboration among a wide range of actors with similar agendas to shift worldviews, society, and economies from “us vs. them” to “we all”’. WEAll works on three key pillars: connecting and strengthening the work of actors that collectively have the power to change the economic system, co-creating knowledge, and changing cultural narratives about what is possible economically, culturally, politically, and socially to bring about economies in service to life. At this writing, WEAll has more than 400 organizational and thousands of individual members, is working with six national governments through WEGo (WEAll Government, now spun off), has 88 ambassadors (affiliated thought leaders), 150 academics, and 13 local hubs, with numerous others developing.

* All information on WEAll is taken from their website, effective January 2024. The example is meant to be illustrative of the general catalytic approach described here rather than definitive. Other examples of entities that take a catalytic approach to change include EcoCiv, 1000 Landscapes for 1 Billion People, Seafood Source, The Nature Conservancy, GRLI (Globally Responsible Leadership Initiative), and Doughnut Economies Action Lab. In other work Ju Young Lee and I studied 27 such entities to understand how they work (see Lee & Waddock, 2021) and Steve Waddell and I synthesized how transformation catalysts work (see Waddock & Waddell, 2021).
Some transformation specialists describe the desired future, as WEAll does, in terms that emphasize a focus on fostering life as opposed to the wealth, growth, and consumption orientation of today’s economics. Some descriptions also add localization of control and decision-making to issues of voice and participation, as evidenced in WEAll’s numerous and growing collective of local hubs. Further, with all the attention on sustainability, there is a growing recognition that something beyond ‘sustaining’ current practices and systems is needed for emerging a socially and ecologically flourishing world. That conception is aligned with much Indigenous wisdom, because it is based on recognizing that humans are integrally part of, interdependent with, and dependent on nature or, as WEAll expresses it, in its value of togetherness and ‘a restored and safe natural world for all life.’ Humans do, in fact, rely on and are interdependent with nature’s resources and technological progress alone will be unlikely to solve today’s issues, as humans are not separate from nature and somehow immune from nature’s constraints. In summary, the concept of transformed socio-ecological systems generally emphasizes the holistic transformation of socio-ecological systems towards equity, justice, fairness, and inclusiveness for humans operating within planetary geophysical boundaries that results in flourishing for humans and other than human beings.

There is also significant understanding of the changes defined as cycles of transformational changes in socio-ecological systems in the system called panarchy, as well as the different levels at which significant shifts occur and their influence on other levels in what is known as the multi-level perspective. The need for transformative systemic change as well as what it might look like has reasonable consensus (e.g., 27,40,50,56). Other scholars acknowledge the emergent nature of processes associated with transformative change and

---

**WEAll has articulated the following vision:**

We envision a world where everyone has enough to live in comfort, safety, and happiness. Where all people feel secure in their basic comforts and can use their creative energies to support the flourishing of all life on this planet. We thrive in a restored, safe, and vibrant natural environment because we have learned to give back as much as we are given. A world where we have a voice over our collective destiny and find belonging, meaning and purpose through genuine connection to the people and planet that sustain us.

**WEAll works internally using a core set of values that include passion (for their purpose), care, trust, togetherness, and equality. To achieve its vision of Wellbeing Economies, WEAll fosters the core economic values of: dignity, nature (a restored and safe natural world for all life), purpose, fairness, and participation. WEAll, which was founded in 2018, has emerged with a variety of approaches to systemic change since its inception: catalyzing change by bringing together multiple actors from different regions, sectors, and levels “to influence societal values and norms and show that change is necessary and possible,” working through collaboration and learning together.**

Source: Synthesized from WEAll: [https://weall.org/](https://weall.org/)
its co-created nature, which require ongoing learning and adaptation in addition to clearly articulated core values\textsuperscript{20,21,28} in a future that cannot be predicted. In addition, there is a need for open awareness of systems supporting wellbeing, a clear sense of agency on the part of change makers, and strong social cohesion among the parties working towards change\textsuperscript{27}. Purposeful transformative change is also considered to be based on experimentation\textsuperscript{67}, because of its inherent uncertainties and unpredictability\textsuperscript{68}. Significant attention needs to be paid to what Meadows called leverage points for transformative change\textsuperscript{69}, in places in the system that enable ripple effects beyond the immediate changes envisioned or attempted. Since Meadows also emphasized the importance of paradigm or mindset shifts in fostering transformation, shifting core narratives or social imaginaries\textsuperscript{70}, which can include visions and shared aspirations or new narratives that inform such mindsets\textsuperscript{45,71,72} and important cultural mythologies\textsuperscript{73}, takes a central place as an important lever for transformative change.

The transformative change literature also describes many of the important system characteristics of transformation, including recognition of complexity, nonlinearity, and, as noted, the importance of narratives and social activism as key leverage points, all of which are evident in WEAll. Further, governance mechanisms need to provide pathways forward, with four ‘drivers’ perceived as necessary by one set of scholars: technology innovation, political economy redistribution (equity), new narratives, and transformational learning\textsuperscript{74}. These characteristics mean that new and more integrated ways of knowing, along with transdisciplinarity and a relational perspective among a wide range of stakeholders, are also important\textsuperscript{27}.

These systemic considerations inform the work of transformational change catalysts, who are often (and here) described as change (transformation) stewards because, in a very real sense, they are caretakers of systems that will benefit others\textsuperscript{45}. Westley and colleagues’ synthesis identifies nine skills needed by such stewards: facilitating knowledge building and use, vision building, developing social networks, building trust and legitimacy, developing social innovations, mobilizing and preparing for change, recognizing opportunities, communicating ‘small wins’, and facilitating and negotiating conflict resolution\textsuperscript{22}. Wamsler and colleagues similarly indicate that transformation stewards need an integrated set of transformative capacities that include awareness (presence, attention, self-awareness, self-reflection), connection (including compassion and generosity), insight, purpose, agency (empowerment and co-creation of meaning and actions, among other aspects), which is associated with mindfulness\textsuperscript{9}. These capacities combine with inner states, including non-materialistic and earth-centric values, caretaking responsibility and a general ‘other’ orientation that includes both humans and other-than-human beings\textsuperscript{9}, as well as meaning-making, learning and listening orientations, and integrative approaches that overcome dualisms like mind-body separation\textsuperscript{49}. Collectively, these attributes characterize the stewardship roles needed by transformation catalysts, many of which are expressed in both the internal and economic values expressed by WEAll. This paper synthesizes and integrates a process perspective across these various conceptualizations and empirical results to articulate a generalized framework for how purposeful and prospective or future-oriented systemic changes in desired directions can deliberately be guided by stimulating and integrating explicitly-developed and generative social visions\textsuperscript{9,19,22,49}. This process synthesis takes up the challenge presented by Bentz,
O’Brien, and Scoville-Simons, who observed that ‘there is very little shared understanding of how such [purposeful] transformations come about and to seek greater integration across the literature’\(^49\), p. 1, providing insight into that ‘how’ using the example of WEAll.

“Transformation catalysts or stewards are actors—individuals or people working in initiatives—who recognize the need for systems transformation and are willing to steward (but not ‘plan’ or ‘lead’ in the traditional sense) transformative system change.”

3. Approach

The rest of this article presents a prospective or future-oriented framework that outlines a generalized set of processes for the how of catalyzing purposeful transformation towards thriving socio-ecological systems that transformation catalysts can use to connect, cohere, and amplify the work of change agents who typically operate in underdeveloped systems into cohered and effective transformation systems. These ideas are based on a synthesis of the literature introduced above, as well as working with the ideas and practice of purposeful system change\(^75–80,80\) (also 75,80). In particular, it builds on work done in collaboration with Steve Waddell and the Bounce Beyond team.

Epistemologically, this framework for catalyzing transformation is prospective\(^18,81\) rather than retrospective in two senses. First and most importantly, it is a collective ‘envisioned prospection’, which means that it is oriented towards enabling participants, that is, catalysts and changemakers, to envision and try to bring into reality a set of shared aspirations for the future\(^18\). This collective envisioning has been described as ‘sensing, presencing, intuiting future-forming, collaborative construction of a better world’\(18,\ p.\ 26\). Secondly, it is sufficiently new that it is offered as a prospective framework synthesizing past work as discussed above, as well as experiences of how more effective, purposeful systemic change can be catalyzed and tested in practice to evolve the future in new ways. Although that future can be imagined and actions\(^81\) can be taken towards it, specific outcomes cannot be predicted, and different actors will do things in their own ways.

Ontologically, these ideas are built on a quantum, complexity-based, and wicked problems understanding that provides a realistic and highly relational perspective on the way the world—and systems within it—work, based on today’s scientific understandings. Specifically, it is based on understanding the systemic implications of quantum physics combined with ‘complex wickedness’, which is an integration of complexity-based systems\(^35,82–84\) and wicked problems\(^34,35,85,86\) theories. Together these understandings describe the inherent characteristics of any living (socio-ecological) system and move away from mechanistic, reductionist, and positivist understandings of how the world functions towards a living system and quantum physics-based ontology. These perspectives when combined view systems and the living world as an interconnected, inseparable whole that is deeply entangled and interconnected,
complexly interrelated, inherently relationally based, emergent, and dynamic. Although it is often necessary to define systems and their boundaries, it is important to recognize that those boundaries are permeable—and linked to other systems.

Catalyzing purposeful transformation engages a participative, co-creative process that is emergent, nonlinear, with actors and actions entangled and aimed at prospectively emerging a collectively desired future world that does not currently exist. Although that future can be imagined and actions vibrant, and humane organizations and communities? This has been a guiding question for the field of ODC throughout a year-long series of activities (e.g., design meetings, webinars, and informal dialogues taken towards it), because what emerges from novel or newly-structured interactions and engagements is nonlinear, emergent, and unpredictable, the outcomes of transformation catalysis are similarly unpredictable, though patterns do exist. The quantum-based, complexly-wicked perspective on the nature of socio-ecological systems means that impacts and outcomes thus emerge from the interactions (in what might be characterized as a kind of epigenetic or co-evolutionary process) of actors who are brought together in new ways to co-create new narratives, aspirations, and action and implementation plans. Such interactions require transformation stewards to ‘let go’ of pre-conceived plans and ideas to orient towards possibilities as envisioned in agreed-upon and active co-creation with other participants.

In the framework, there are two other important assumptions. One is the idea that systems transformation is a distinct form of change that works at very fundamental levels, affecting multiple interacting and important elements of the system (explained more below). Second is the assumption that in the type of systems described above, catalytic processes will be more effective at bringing change about than more directive, linear processes because they draw out the skills and capacities of participating actors in co-creative and new ways.

4. Catalyzing Transformations

Catalyzing transformation is a process for achieving purposeful, large- (and small-) scale whole system transformation. It involves actors and change makers serving as transformation catalyst(s)/stewards to bring together other change makers and initiatives in a given context or system that are or would like to be working for systemic changes towards an aspirational and collectively-shared future. Transformation catalysts work to connect, cohere, and amplify the transformative impact of multiple previously un- or loosely connected change makers who want to accomplish transformative systemic change in a self-aware and focused transformation system. Change makers in a transformation system work towards more impactful, shared aspirations, agendas, and actions that can, because of the collective power, potentially better overcome obstacles to change, current regimes, and systemic inertia towards more just, inclusive, equitable and flourishing systems. This framework for catalyzing transformation offers a powerful set of processes that can be applied in widely different contexts and adapted as necessary. Yet it provides sufficient guidance that cohered and amplified actions can shift the system in the desired direction.

Catalysis of chemical reactions involves the introduction of an agent into a chemical mix that creates significant change without undergoing change itself. Catalyzing transformation has
a similar fundamental change effect; however, it is important to recognize that transformation catalysts are inherently part of the system undergoing change. As they are part of the system, they co-evolve with systemic changes because of the emergent, interconnected, and dynamic nature of such shifts. Importantly, transformation catalysts recognize that it is participants in emerging transformation systems who are the key actors undertaking transformative initiatives and actions (not the catalysts). It follows that through the quantum and complexity lenses, there is no ‘objective’, or for that matter, values-neutral stance possible for observers and actors since the premise is that of interconnectedness and interrelatedness in one holistic system, which means that any given actor’s stance and actions matter.

The next sections discuss how transformation catalysts work to organize actors and initiatives in new ways through processes enabling connecting, cohering, and amplification of their work, generating potential for transformative impact.

5. The Work of Transformation Catalysts: Connecting and Cohering

Transformation catalysts or stewards are actors—individuals or people working in initiatives—who recognize the need for systems transformation and are willing to steward (but not ‘plan’ or ‘lead’ in the traditional sense) transformative system change, much as WEAll has done in bringing together numerous actors around the shared agenda of creating wellbeing economies. They do so by bringing together a collection of ‘the willing’—other actors and initiatives who are interested in similar goals and largely, at least initially, not directly connected with each other, to understand each other’s individual and potential collective efforts with respect to a given context or system. While connecting, cohering, and amplifying are discussed separately here, in practice, they are interconnected and overlapping. Figure 1 provides an overview of the connecting, cohering, and amplification work of transformation catalysts.

Connecting: Two processes are core in connecting processes: seeing and sensemaking. Seeing involves helping relevant parties define and understand the relevant system and its (possibly redefined) purposes. Seeing means understanding who is doing what changes work towards relatively similar aspirations in the relevant context by identifying actors already working (or willing to work) towards change and connecting them in shared processes of sensemaking. For example, WEAll is accomplishing this connecting by initially identifying, and then linking together the numerous actors already engaged in working towards what WEAll characterizes as a wellbeing economy—now numbering more than 400 initiatives and organizations, thousands of individuals, and multiple hubs and governments.

Sensemaking here means helping connected actors map and begin to understand enough about the whole system to begin to work together effectively. Mapping and stakeholder identification processes help uncover the potential shared agendas that exist among participants and initiatives and their (collective and independent) transformative potential. WEAll began with an initial insight that the current structure and practices of economies were core to sustainability issues (a narrative perspective, see below), then brought together numerous initiatives with similar orientation to collectively make sense of this issue and begin to align their efforts.
As actors connect, typically through mapping processes of various types that enable the emergence of a shared understanding or sensemaking of the relevant system or context, they can begin to think about themselves as a transformation system. A transformation system is the collection of change makers willing and able to cohere and align their activities for systemic impact, rather than solely as individual, largely unconnected actors doing their own thing. This alignment or connecting enables what are frequently small, under-resourced, and disconnected entities to come together in new ways to enhance transformative potential, helping to overcome what Hawken described as the ‘blessed unrest’ of many transformation initiatives. In WEAll’s case, there are multiple such emerging transformation systems, including WEGo, the Wellbeing Economy Governments (currently numbering six), the policymakers network comprised of policymakers interested in understanding how to develop Wellbeing Economy policies, and the Local Hubs, who work on local visions and transformation while connecting with each other to share experiences, insights, and learning.

Recognizing that the nature of purposeful system change involves changing significant relationships and fundamentals in a system, one way to synthesize what changes are needed...
is to recognize that there are five core system dimensions, all of which need attention and may well change. Transformation catalysts’ work is to facilitate connected initiatives’ recognition of how the relevant system and its boundaries and purpose(s) are/need to be (re-)defined, understood, and played out in practice. Thus, catalysts in a sense ask participants whether or not the currently-defined system’s purpose is ‘fit for purpose’, and, if not, how its purpose(s) might need to be rethought. Purpose matters because it informs other key aspects of any socio-ecological system. WEAll itself, as an initiative, serves as the core transformation catalyst moving this purposeful change agenda along, articulating it, and drawing together the numerous allies it now collaborates with, with particular focus on how economies’ purposes are both stated and developed, i.e., towards wellbeing for all.

As the seeing process evolves, participants need to think about other core aspects of the system, particularly how they understand the system, that is, what paradigm (or mindset) do they (individually and) collectively hold with respect to the system? The reason that understanding the paradigm is important is that Meadows considered shifting and even transcending paradigms to be the most powerful transformative change lever. Paradigms or mindsets inform people about the nature of the system, their place in it, and how it and they relate to the broader context. Also important is to determine what performance metrics are used—or need to be used—to assess and evaluate the system holistically, because how performance is assessed drives a lot of behavior within any given context. Purpose(s), paradigms, and performance metrics in turn influence the operating practices (policies, processes, and procedures) that characterize how work gets done in a given context or how that system operates, as well as influencing important power relationships, structures, and resource flows in that context, which further determine how the system actually performs and meets its intended purposes. These five aspects, all of which likely need to change in transformation, can be synthesized as purpose, paradigms, performance metrics, practices, and power structures.

Meadows in arguing the importance of paradigms pointed out the need for finding important levers with which to bring change about, including identifying and possibly rethinking dominant narratives that shape mindsets or paradigms. A redefinition of purposes, for example, can mean developing new social imaginaries or narratives that reframe how systems are understood shaping the dominant paradigms or understandings that actors in the system hold, which in turn inform different ways of engaging in and acting on that system. For example, many transformation specialists argue for shifting the ‘story’ of human relationships with nature from one of separation and human exceptionalism to integration as a core aspect of transformative change. Others call for explicitly life-affirming new narratives. Shaping economic systems to foster ‘life’ or wellbeing rather than financial wealth can make a big difference in how the goals, purposes, and practices of the system are shaped.

Throughout its existence, WEAll has developed a variety of white papers and briefing papers and other ways of shaping narratives that are broadly shared with allies and interested others as a way of fostering new seeing and sensemaking about the nature, purposes, and...
functioning of economies around not financial wealth and endless growth but rather wellbeing that includes all people and nature. That sensemaking includes making available (and broadly sharing) definitions and visuals of key concepts, identifying core relevant resources including papers, articles, books, videos, and podcasts, and describing key case studies of transitions towards wellbeing. Notably, all of these resources and developments have taken considerable investment time to emerge.

“It can be helpful to think of amplification as evolving and emerging as a cascading array of initiatives, propagating change in ways that are matched to the specific contexts in which they arise.”

Cohering: Cohering also involves two core processes: visioning or new narrative creation (in a sense, a continuation of the sensemaking process) and collaborative action planning. Once participants in an emerging transformation system have been initially connected, transformation catalysts can engage them in shared visioning (and related) processes (e.g., 102-105) to begin to co-create their desired/aspirational future for the relevant system. In doing so, they can begin to cohere and make sense of their activities in new ways that can inform new narratives or social imaginaries70. These new narratives inform mindsets and paradigms within the relevant system, reshaping understandings in connecting processes. It is the participants in the transformation system who are co-emerging the vision and action strategies, not the transformation catalysts, though they are part of the process and have input. WEAll’s efforts to reshape the economic narrative, as noted above, include numerous publications and definitions, along with fostering collaborative activities in a whole range of contexts—from governments focused on wellbeing economies to engaging both initiatives and individuals in collaborative and co-creative engagement.

Shared visioning helps change makers understand better what needs to change and towards what ends, as well as how they might undertake different change processes and begin action planning. As they do so, they can begin to sense where their initiative’s individual actions, aligned with the vision or new narrative, make sense and where collective engagement20,106,107 and action, co-producing results, are needed to bring the aspirational future into reality. These two activities—shared visioning and action planning—can help change makers cohere their actions as a transformation system in ways that they previously could not because they were unconnected with others who share similar agendas. That leads to the third set of activities, the amplification of transformative impacts. For example, as WEAll describes it, its hubs are designed to ‘collaborate to change the debate and accelerate economic transformation locally, whether it is in a region, a country, a city, or a bioregion. WEAll Hubs serve as links between local and global movements, actions, and solutions, cross-sharing experiences and working within their territories to co-create context-specific visions, narratives and solutions for a transition to a Wellbeing Economy.’
6. The Amplification Work of the Transformation System

Amplifying: Amplification processes derive from the connecting and cohering processes and involve the implementation and emergence of new transformation infrastructure, including subsystem transformation catalysts and systems as contextually appropriate. Connecting begins to shift the system as actors get to know each other, understand what others are doing and begin to figure out where redundancies and gaps exist in transformation efforts. As the transformation system evolves, transformation catalysts can guide but not control the emerging connections in traditionally conceived ways. Rather they are stewarding the co-production of proposed action strategies that participants wish to undertake. Amplification also necessarily involves participants actually implementing the action strategies developed through cohering processes, and, importantly, witnessing and evaluating the results and learning from those outcomes and impacts so that they can change what needs to change in future efforts.

Figure 2: Processes and Guidelines for Evolving Purposeful Transformation Systems

Source: Waddock, S., 2024. Catalyzing Transformation, author’s own, used with permission.

One way to conceive of how successful transformation systems evolve is that participants put their plans into action, fostering the emergence of a cascade (or ripple effect) of similar activities in more localized (or possibly more global) contexts within the overall system. It can be helpful to think of amplification as evolving and emerging as a cascading array of
initiatives, propagating change in ways that are matched to the specific contexts in which they arise—much as seeds scatter, then sprout and grow in ways that are matched to the particular ecosystem where they develop. The process of catalyzing actors through connecting and cohering processes creates purposefully aligned transformation systems. These new catalysts work by cohering the actors in those sub (or meta-) contexts to create new, more local or broader transformation systems as a way of amplifying impacts. Figure 2 provides an overview of processes that help bring such purposeful transformation systems into alignment and amplify their collective work.

“The whole idea behind catalyzing transformation as a change framework is that it is a new approach to organizing existing and emerging initiatives for transformative impact.”

In WEAll’s case, such amplification involves the emergence and spinning off, for example, of the WEGo (Wellbeing Economy Governments) group, as well as the emergence of local hubs that share a wellbeing economy agenda but recognize the need to be locally and contextually appropriate in their decision making and activities. For example, the Australian Hub expresses its goal as to ‘change our economy’s goals, drivers and measures of success—from mere growth and profits for some to wellbeing for people and the planet’. The WEAll East Africa envisions ‘supporting grassroots movements across East Africa to be key drivers for the global movement for a wellbeing economy’. Doing so also involves participants truly tackling systemic challenges, discussed next.

**Tackling Systemic Challenges:** Any system that is the focus of purposeful transformation efforts has both obstacles to change—in the form of entrenched interests, current practices and policies, resource constraints, and many others—as well as opportunities where the system has ‘opened’ sufficiently that change is possible, since systems themselves go through cycles (sometimes called panarchy) in which there are times when more or less change is possible. Just think of the powerful entrenched interests in the conventional economy, where riches accrue to the already wealthy, in shifting towards WEAll’s envisioned more equitable, life- (versus wealth-) centered economy. One of the core sensemaking processes is to determine the state of the system and its adaptability to change, and potentially to create the conditions for more change if necessary. The whole idea behind catalyzing transformation as a change framework is that it is a new approach to organizing existing and emerging initiatives for transformative impact.

In thinking about amplifying transformative impact, it is helpful to envision the collection of actors in a transformation system as what is called a loosely coupled or underorganized system. Initially, at least, actors are generally not well aligned or connected to each other and do not consider their work in a collective or cohered way. The under-organization or loose coupling means that traditional hierarchical organizational structures are not present in the system, hence there is no central authority to assume conventional leadership. Amplifying
involves transformation catalysts stewarding the fostering of whole system change that works to bring participants together in new ways, generates alignment, and helps them learn how to and actually begin to work in new ways for greater impact. In this approach, the participating entities remain independent while simultaneously attempting to cohere (envision and action plan) their collective efforts, hence working towards overcoming the ‘blessed unrest’ described by Hawken\(^9^9\) and noted earlier. The steward or catalyst needs to be able and willing to cohere and align efforts without too much ego getting in the way of effective action by others. Because there is no ‘boss’ or leader in these systems, stewards can benefit from using core design guidelines to enable actors to develop amplified transformative impacts.

**Stewardship Design Guidelines:** Stewarding catalytic transformation as described above is a network weaving (or netweaving)\(^2^0,2^4,1^1^4\) process of bringing the efforts of largely independent actors into alignment. Netweaving relies on design guidelines to forward shared agendas. Given the orientation of most transformation efforts towards equitable, just, inclusive, and flourishing socio-ecologies, one useful guideline is to adopt principles for action that ‘give life’ to systems\(^5^0,5^6\) or emphasize wellbeing of the whole system.

One approach synthesizes these life-affirming principles as: being holistic, building in diversity, ensuring the capacity for novelty as well as permeable boundaries that allow what is no longer fit for purpose to be eliminated, and recognizing interconnectedness\(^1^1^5\).

A second design guideline emphasizes the importance of such catalytic efforts being values- and shared aspiration-driven\(^8^0\). Principles associated with inclusion, equitable collaboration and participation (reducing power differences as much as possible), and generating aspirations and potential actions co-creatively apply here\(^4^0,6^7\) with respect to how various people and initiatives participate in transformation efforts in particular.

Another design guideline indicates the need for taking complexity-based perspectives, discussed earlier, to recognize the holistic nature of the system and interconnections among its elements, its multi-level, -spatial, -stakeholder, and -perspective diversity, as well as its self-organizing (emergent) qualities\(^5^1\).

The final design guideline (note that these guidelines are interconnected and overlapping, not ordered) argues for taking the stewardship approach discussed earlier, i.e., a catalyzing, coaching, facilitating, and experimentation approach that helps participants in the system become aware of themselves as a system to cohere their efforts for more effective actions to be taken (e.g., 21,22) to further the amplification process.

WEAll’s internal values of passion (for needed economic change), care, trust, togetherness, and equality reflect many of these design principles. Much the same can be said for the articulation of the economic core values that WEAll has designed: dignity, nature (healthy and safe), purpose, fairness, and participation. A visual image of the whole process of catalyzing transformation is presented in Figure 3, and the process is summarized in words as shown in Figure 4.
Figure 3: Framework for Catalyzing Transformation: The Overall Process

Source: Waddock, S., 2024. Catalyzing Transformation, author’s own, used with permission.
7. Conclusion

Overall, this framework outlines an adaptive and flexible set of processes for achieving purposeful systemic change and transformation in a wide range of systems in contextually appropriate ways, using the emerging example of WEAll, the Wellbeing Economy Alliance, to illustrate how such ideas can be put into practice. This framework recognizes the typically underorganized nature of system change efforts. It proposes that someone or a group of people and initiatives needs to step into the role of transformation catalyst/steward, then work prospectively, that is, in recognizably future-oriented ways, to connect and cohere the efforts of numerous others already working for similar agendas to understand themselves and operate as purposeful transformation systems that can collectively amplify transformative impact. If actors in the transformation system are willing to come into alignment around shared aspirations and agendas—a new social imaginary for the relevant system—they can amplify the transformative impact of their work, both as individual actors and, importantly, collectively when appropriate to the challenge. This approach thus offers a synthesized framework for organizing systemic change processes that can be applied in many different contexts.
This synthesized framework is needed because the transformation field still struggles to move beyond what was termed the ‘blah blah blah’ of system transformation towards the how of (co-)generating purposeful transformative action. That is what the catalyzing transformation framework tentatively offers, with the recognition that there is still much to be learned because these ideas are still tentative, to further inform how systemic change in positive directions can occur.

Author’s Contact Information
Email: waddock@bc.edu

Bibliography
48. Cafaro, P., Hansson, P. & Götmark, F. Overpopulation is a major cause of biodiversity loss and smaller human populations are necessary to preserve what is left. *Biological Conservation* 272, 109646 (2022).


Arrows, F. Point of departure: Returning to our more authentic worldview for education and survival. (IAP, 2016).


The Ubiquity of Machines: Will Machines Overcome Human Beings?

João Caraça
Senior Adviser, Calouste Gulbenkian Foundation, Portugal; Fellow, World Academy of Art & Science

Abstract

The article discusses the ubiquity of machines in human societies and whether machines will overcome humans. It notes that societies find order through systems of values, resource management and allocation, which are both social constructs and technological representations of their environment. Any society is inseparable from its technical systems for needs like transportation. The sustainability of current societies relies on developing knowledge across fields. Technology, economics, politics, and culture are just aspects of the same social reality. The present crises stem from the weakening of modernity, an intellectual movement that emerged in Europe in the 16th century. It overcame issues through civilizational and cultural responses. The invention of writing, printing, and now electronic digitization were major revolutions in communication. While machines substitute physical strength, human communication involves tacit knowledge, feelings and passions that algorithms cannot emulate. Therefore, the role of machines remains a problem as old as civilization.

Human societies find their order and stability through systems of values, management and allocation of resources; these systems are, simultaneously, social constructs and technological representations of the relationship with their environments. This means that any society is inseparable from its technical support system—for transportation, energy, shelter, food and communications.

The sustainability of contemporary societies is therefore based on the development and use of knowledge arising from the different fields that enable a regular satisfaction of the conditions needed for survival. Technology, economic organization, political systems, morals, culture—all these are no more than different aspects of the same social reality, which emerge according to the perspective through which we stand to observe it. Namely, a society is unthinkable without its technical vectors, whose character derives from the characteristics of the material, tangible relationships it maintains with the environment.

The high level of materiality with which we now live (and without which a human catastrophe would certainly occur) is measured by the intensity of our use of energy resources, the exploitation of soil and marine resources, the size of our cities, the density of connections between them, and the numerical expression of the human lives that populate the planet: almost eight billion people! This materiality is translated by the violent change in the location and constitution of many materials, as well as their transformation in order to be
used or consumed in sometimes very distant places. As materiality increases, the rate of this forced change expands. Violence against nature thus escalates; it can only be tamed by the deployment of adequate cultural behavior.

“No algorithmic procedure, however sophisticated it may be, can emulate or copy the whole of our process of thinking and communicating.”

The deep roots of the crises that we are at present living through derive from the weakening of Modernity—the intellectual movement and worldview that emerged, gained wide assent and set the pace of the evolution of Western European countries from the end of the sixteenth century onwards.

The sixteenth century was a scene of deep crises in several domains:

i. military – the fear of being defeated by the Ottomans;
ii. religious – The Protestant Reformation;
iii. economic – the shift of the axis of the economy from the Mediterranean to the Atlantic;
iv. educational – humanism dethroning scholasticism;
v. the relationship with nature – the value of experimentation;
vi. communication – the introduction of the printing press;
vii. morals – the intellect taking the place of the soul.

Modernity was the result of overcoming these issues through a civilizational and cultural response. The importance of the introduction of paper and the invention of books and drawing cannot be underestimated. It was the increase in communication that originated the need and will to invent and multiply the scope of contrivances to amplify human physical strength, enlarging the ‘artes mechanicae’ nurtured at medieval monasteries and unfolding a mechanical culture that brought to light a new science of motion, i.e., modern science. Technology ceased to be a simple extension of nature into society and became a product of human intelligence.

The European expansion took place at the expense of a proliferation of machines in all tangible sectors—transportation, energy, construction and production. Machines of varied categories started to be seen everywhere. And in the nineteenth century, the Industrial Revolution brought the ideology of material progress to its peak, and was based on scientific enquiry—and technological exploration of nature, coupled with the recognition of the rationality of such endeavors.2

The success of capitalism in modern times proceeded through processes of separation of the basic components of social life in all communities. Vision was separated from light due to the use of instruments such as the ‘camera obscura’; the work undertaken by Machiavelli, who pointed out that “the ends justify the means,” sanctioned the separation between politics
and ethics. Politics became ‘administration’. Later on, a separation evolved between economy and ethics. Economic focus became centered on ‘production’.³

Simultaneously, the separation between economy and culture occurred. Culture’s role became subsidiary, an ornament embellishing society, that was quickly separated into two distinct classes: ‘elite culture’ and ‘folklore’. And in the transition to the twenty-first century, with the expansion of ‘services’ enabled by the new networks of communication at a distance such as the internet, the separation between ‘production’ and workforce finally took place. No wonder the engine creating tangible wealth stalled.

The discovery of semiconductors and the invention of electronic computers and devices did unfold the development of the new techno-economic paradigm based on the digitalization of communication. Machines were fantastic contrivances that substituted physical strength, so why not extend this substitution practice to new machines that would take care of human communication through the development of the concept of artificial intelligence?

This seemed like the perfect solution, a superb opportunity to bring the full replacement in the economy of workers by machines. However, there is a little snag in implementing this possibility: human communication is not solely about explicit knowledge and information; it involves tacit knowledge, feelings, and passions. No algorithmic procedure, however sophisticated it may be, can emulate or copy the whole of our process of thinking and communicating. Therefore, these are moves in quicksand.

The first revolution in the field of communication and information was the invention of writing. This was also the first digitalization—that of the spoken words. Without written words there would have been no cities, administrations, armies, states, or empires. The second revolution in communication was the introduction of the printing press, which was viewed in an epoch of primacy of materiality as a ‘machine’ for communication. Printing was one of the carriers of Modernity.

The third great revolution in communication is the one in which we are now living, i.e., the electronic digitalization of images and words, still in its beginnings. This was simultaneously a second digitalization—in what concerns visual images. No one in his (or her) full capacity can foresee today the deep implications of what digital image production and manipulation hold for our successors. If we believe that an image is worth more than a thousand words, we can only gaze at the immensity of the cloud that surrounds future societies in this respect.

The emergence of writing and the establishment of cities mark the beginning of a period extending till today: that of ‘domestication of man by man’ (which Thierry Gaudin assumes to prefer to the expression ‘exploitation of man by man’ for its biological meaning).⁴ Gaudin says that the domesticated animal is characterized by a transformation of its morphology and its hormone balance, since domestication is an asymmetrical symbiosis in which one dominant being manages the life of another. With the development of mechanical and professional arts, followed by the geographical discoveries of new people, new resources and new stars, the expansion of trade, the diffusion of machines, and the birth of modern companies and societies ensued.
New technologies, the proliferation of machines and a new organization of work and finance were fundamental elements in the construction of a new identity for the Europeans. Of course, the spread of industrial production and machines was accompanied by numerous conflicts, issues, and social turbulence. The system of capitalism is prone to societal, financial and technological crises.

“Let us not forget that behind any machine (less or more ‘intelligent’) there is always a person (individual or collective) who created it, or who owns it, for a well-defined purpose. It is behind the machine that we must look at. Always!”

Bento de Jesus Caraça discusses precisely what was designated then by “The problem of machinism”. Caraça says that “the process of the machine and its action on contemporary social life has been made, in recent years, many times, and with different orientations. There are those who accuse it of the greatest evils that presently plague civilization—unemployment, overproduction, the automatism of man, and there are those who (...) break into a cold sweat at the idea of what would be a world ruled by the machine, standardized, cold and without poetry. [But] (...) The existence of the machine in today’s life is a fact against which there is no need to fantasize or whine. (...) Nowadays, the normal development of peoples without it is no longer conceivable. (...) The evils are not in the machine but in the inequality of distribution of the benefits that it produces. (...) The fundamental problem is not a question of technique, but a question of social morality. And it is not up to technicians to deliver the solution. It is up to men”.

We can perfectly transpose these words to the present times, to account for the role of the new ‘intelligent’ machines, as well as the consequences of their growing presence in the life of our societies. The problem of machines (endowed with smaller or bigger ‘intelligence’) always lies in the exclusion of human beings from the resources that guarantee their survival and their autonomy, from which they derive their dignity. The new machines may be fascinating and even addictive, but the problems that envelop them are as old as civilization.

The spread of computers and their networks in contemporary robotized societies was initiated back in the 1980s. It was the matrix that generated electronic digitalization, the third major transformation in the field of information and communication, and a revolution still in its infancy, as mentioned above. We find ourselves in the heat of this transformation which, certainly, will change the face of the world. The new technological infrastructure will strongly interact with the societal organization and the institutions that will be part of it. A very different world is setting its course.

In Après la Démocratie, Emmanuel Todd says it is no wonder that there is a deepening of the emptiness of religious sentiment, which makes a wild variety of sects and confessions proliferate, emerge or reemerge. Or that there is an observed educational stagnation, with no
responsible people willing to finance the learning of new processes, knowledge and values. Or that a new social stratification is being born, accompanied by a definite impoverishment of the middle class. Or, still, that the notion of ‘economy of knowledge’ which is spreading is no more than the establishment of business management in everything that belongs to the public sector.6

In fact, we must again realize that the solution to the present uncertainties cannot be solely technological, because we are not dealing with a straightforward technical problem. What is at stake is mostly moral, social and political, i.e., it fully embraces societal culture in its broader sense. The issue involves human beings, machines, their interaction, and finally, human survival. It is the compound of the networks of these connections that needs to be addressed. Its depth lies in the inclusion of timeless themes.

Will intelligent machines overcome us? What will be left for us to do if machines carry out all the tasks of human life support? Will we then be able to decide otherwise? Will power still exist? Where?

Modernity has not yet completely disappeared, and the belief in humanism that humans are the creators of their destiny persists. As creators, a part of us still suspects that generating artifacts endowed with a life of our own will be possible! And thus, on such a glorious day, we are about to attain eternal life! Human beings, modelled by divine powers, will at last sit among the gods.

Many failed attempts to achieve that goal have littered the past. Several instances have occurred in which humans have challenged the gods (the immortals) in the futile hope of obtaining a source for everlasting life. Prometheus, the outcome of a society with no concept of progress, but of a return to a glorious past, ended up being severely punished for his crime. Faust, at the dawn of Modernity, finished by selling his soul to the devil. Frankenstein, in a period of growing industrial achievement, produced an anguished creature that vaporized into the dark.7 Before the Big War, the Time Traveller, the supreme rebel who discovered the sacred secret of time, disappeared forever with his machine,8 an act maybe heralding the fate of European empires. These were not recommended initiatives…

What then can we say about transhumanism and the remarkable simulations of intelligence in machines today? Or of the prospects for a society addicted to regulation by machines? Or even about the superintelligence that will eventually dominate and domesticate the world of human beings? Or the chimera of immortality?

These are no more than contemporary examples of modern mythology. We think they are fictions—about human creations that may assume an existence independent of the will of their creators. Let us not forget that behind any machine (less or more ‘intelligent’) there is always a person (individual or collective) who created it, or who owns it, for a well-defined purpose. It is behind the machine that we must look at. Always!

We will need to analyze, understand, discuss, ponder, decide, and act, all the time, forever. Using the languages, values and assumptions of the times we live in. It is the start of a deep transformation of our society that we are experiencing, engaging in, and eventually enduring.
Modernity is being phased out and ‘Something we still do not have a name for’ is emerging. But that ‘Something…’ will be the outcome of the ongoing interactions between cultures, expectations, infrastructure, resources, and the environment. The principles we establish, the institutions we design, and the talent we will cultivate, are critical to the quality of our becoming.

We know from history that nothing can be acquired forever. It is on the outcome of the collective endeavor of humanity that its future will depend. Not a twist of fate.

Author’s Contact Information
Email: caracajoao00@gmail.com

References
4. Thierry Gaudin, 2006, Perspective des religions, ed. Ovadia, Nice
6. Emmanuel Todd, 2008, Après la démocratie, Gallimard, Paris
9. NSCAI, 2021, Adapted by the author from the Conclusion of the Final Report of the U.S. National Security Commission on Artificial intelligence
Global Leadership or Self-Governance: The Basic Laws of Governance

Dimitar Tchurovsky
Associate Professor; Social Psychology Consultant, Human Resource & Customer Relationship Management, Russia

Abstract
In terms of its complexity, modern society is comparable to the intricacy of the human brain. Undoubtedly, the global leadership of a system with thousands of subsystems is a real challenge for humanity. Governance is the process of making decisions and solving national, regional and global problems where multiple factors are taken into account. They can be divided into two groups—subjective and objective. Subjective factors include ideologies, geopolitics, the competence and intelligence of the ruling elite, the role of money, public opinion and many others that are the fruit of reason. These factors are complicated by the presence of objective factors such as the level of development of society, a wide range of national interests, the state of the economy, cultural, ethnic and racial characteristics, etc. Obviously, the consideration of all these features is not within the capabilities of individual and collective intelligence. Until now, about 200 forms of government have been used for governance in different historical eras and specific conditions, but for the future society, a governing mechanism or a form of government qualitatively different from those already used is needed. This problem can be solved by a transition from ideologies to a scientifically based vision of society. To develop such a vision, it is necessary to reveal the basic laws determining the structure and functioning of society. The basic laws of governance are only a part of them.

1. The First Basic Law
As the complexity of society increases, so does the demand for the form of government and the intelligence of the ruling elite.

Governance is an intellectual activity. It is determined by two factors: the complexity of society and the intelligence of the rulers. There are three types of intelligence: personal, collective, and collaborative. For thousands of years, the Ancient World and feudalism were ruled by individual intelligence. This form is defined as autocracy. With the advent of capitalism, society became much more complex, necessitating a transition from individual to collective intelligence, where decisions are made by the entire community or their representatives through voting. Collective intelligence is the basis of parliamentarianism and representative democracy. After a series of scientific and technological revolutions in the last century, the complexity of society has reached a level where the existing mechanism based on collective intelligence has wholly exhausted its capabilities and a transition to a new, more sophisticated form of governance based on collaborative intelligence is required. This means
a shift from democracy to collabocracy. This transition can be defined as a civilizational shift, with society becoming more collaborative.

Collective intelligence is a quantitative way of making decisions through voting. The main disadvantage is that it cannot solve problems because it requires the generation of new information, which cannot be achieved by voting. For this purpose, collaborative intelligence is needed, which requires the participation of experts who use scientific methods to solve problems. For this reason, political parties and government organizations use ad hoc and permanent think tanks organized as clubs or scientific institutes.

Today’s think tanks are the green shots of collaboration in governance. Like nascent parliamentarianism, they bear the birthmarks of the political parties and organizations they work for. They develop strategies and scenarios at the request of the guarantor on whom they depend. For this reason, they are subordinate rather than free-thinking and independent centres. The transition from democracy to collabocracy means the emancipation of these centres in relation to political parties and the solving of problems at different levels, which should be implemented by the administration of the community. The transition from financial capitalism (financism) to a post-capitalist organization is a transition from ideology to a science-based vision of society, a transition from a period of decision-making to a period of solving national, regional and global problems, which is impossible to achieve by voting.

Geopolitics is myopic. It analyzes only visible processes and ignores social laws because it does not know them. This creates a lot of speculation, leads to chaos and is a prerequisite for fatal mistakes. The favourite metaphor that geopolitics is a great chessboard on which states measure their strength is an illusion for periods of civilization shifts, because the clash is not between geopoliticians with different ideologies but between them and the invisible hand of social evolution. In the case of civilization shifts, this is fantasy and self-deception because, under the control of the invisible hand of social evolution, a new game begins with new players and new rules. In this battle, geopoliticians play the role of amateurs who have no chance of victory against the Almighty Grandmaster but unfortunately have the opportunity to destroy humanity.

**Conclusion:** The forms of intelligence—personal, collective and collaborative—are the basis of the forms of government—autocracy, democracy and collabocracy. The civilizational transition from democracy to collabocracy is an objective necessity, similar to the shift from autocracy to democracy in the transition from feudalism to capitalism, which is determined by the same reasons—the growth of knowledge and the increased complexity of society, which require a higher degree of intelligence and a more sophisticated type form of governance.

**2. The Second Basic Law**

_The mentality of the ruling elite lags behind social development and becomes an obstacle to growth, necessitating its replacement._

This law explains why and by what mechanism social evolution changes the system and the ruling elites during different historical periods: patricians, feudal aristocrats, Nazi Gauleiters, Soviet nomenklatura and why today’s financial-corporate elite is doomed. In the
period before the change of form of government, it was noticed that the ruling elite became increasingly incompetent to govern the already changed society because its efforts were oriented towards preserving the status quo and its own interests. At some point, incompetence is turned into inadequacy, which is fatal to the system and the elite.

“As society developed, rulers turned wars from wars of conquest into wars of ideology.”

An example from the recent past is the collapse of empires and the institution of monarchy. By deciding to start a “little Balkan war” to punish Serbia for the assassination of the crown prince of Austria-Hungary, Franz Joseph I crossed the line into incompetence and provoked the First World War, which resulted in the collapse of the Habsburg dynasty, four empires and the monarchical institution as the dominant form of government. The ruling elites believed that the battle was between the empires, but in reality, they were puppets in the invisible hand of social evolution and self-organizing force which had thrown them off the historical stage. Therefore, when a system exhausts its governing resources, its existence ceases and the laws that govern it cease to operate. The moment when its functioning is practically impossible is the point of bifurcation. After this critical moment, fundamental changes occur in the system, which alter its essence and represent a qualitative transformation of the system and a change in the ruling elite due to its inadequacy.

At the beginning of the 20th century, three social engineering projects emerged to reorganize society: Communism, Nazism, and Financism, which defined itself as financial or neoliberal capitalism. The newly emerging ruling elites are determined by the subjective factor where those “born to rule” are replaced by “self-made” political leaders or businessmen. The characteristic of these models is that they replaced the objectively formed mechanisms for the self-regulation of society with the decisions of the ruling elite. This makes models problematic because they accelerate development but push society in the wrong direction. For this reason, the first two models have passed into history, and financism is in visible decline. The governing mechanism implemented by this model is the use of fiat money as a lever to manipulate the financial system, economy and society as a whole.

All three artificial models for the organization of society show how ineffective and risky the intervention of the subjective factor is in the self-organization of society without the knowledge of objective laws. As in previous eras, under artificial models, the ruling elite is unaware of the limits of its capabilities and responsibilities to its nations and humanity. However, there is one exception. Unlike Nazism, which ended disastrously for the Third Reich and the Nazi Gauleiters, the Soviet nomenklatura realized the impossibility of governing the communist bloc and voluntarily stepped down from the historical scene. The Soviet state collapsed at the cost of enormous upheaval, but without civil or world war. This gives rise to a timid hope that the financial & corporate elite may also realize the impossibility of governing society through the manipulation of fiat money. Such a probability is very small.
because financism has a global presence, and the illusory power of a hegemon is greater. For now, the escalation in the clash of East and West is reminiscent of the mistakes of the elites of the First World War, proceeds according to the escalation of WWII and will end in an unexpected and catastrophic collapse of financial empires and global leadership.

**Conclusion:** No doubt the power of ruling elites of all ages, especially the financial and corporate elite, is colossal concerning the governed but illusory about the laws of social evolution.

“In the present day, political parties bear resemblance to the religious sects that existed during the shift from religious to political-social awareness.”

---

### 3. The Third Basic Law

*Fiat money as leverage to manipulate the financial system, economy and society is a very effective means for redistributing wealth but destroys morality and pushes humanity towards self-destruction because it creates global and existential problems.*

Using fiat money as a lever to control society has proven to be very effective as manipulation and very primitive as a form of government, which is usually defined as oligarchy or plutocracy. Super-rich dilettantes set the strategy, and mediocre but loyal and corrupt bureaucrats implement it. For about a hundred years, this model has concentrated half of the world’s wealth in a small group of oligarchs, who have assumed the role of a financial-corporate elite. Super-rich does not mean super-intelligent and vice versa. The problem with this model is that by intentionally manipulating the financial system and the economy, the rich get richer but push humanity towards self-destruction because they instil greed, selfishness and hypocrisy. Thus they destroy the moral values, which are the immune system of society. As a result of this governance, humanity today is on the brink of a global catastrophe with mind-boggling consequences.

**Conclusion:** Global and existential problems are created by the ruling financial, corporate and political elite who cannot solve them because they are a product of greed. Solving global and existential problems requires changing the system, the ruling elite and the form of government.

### 4. The Fourth Basic Law

*As society developed, rulers turned wars from wars of conquest into wars of ideology.*

Wars are an essential part of the development of society. For 12,000 years, the victors were conquerors. These were battles for resources: slaves, land and natural resources. With the emergence of social-engineering models for the organization of society, wars were transformed from conquest to ideology. In other words, wars are transferred from the
material to the spiritual realm. The main characteristic of ideological wars is that they are *existential* because of a test of the adequacy of the ideologies themselves or how compatible they are with the laws of evolution. The Second World War ended with the collapse of Nazism and the Cold War ended with the collapse of Communism. That financism is an artificial (ideological) formation is extremely clear, but the fact that it is doomed for now is not realized. Due to the global spread of fiat money, the inevitable collapse of financism threatens not only financism and the financial elite but humanity itself.

---

"The survival of humanity requires a paradigm shift to an ecosystem-like organization, governed by a mechanism resembling the structure and cognitive functions of the human brain. It is a system based on the wisdom of nature."

---

The clash between East and West at the beginning of the 21st century is the battle for world dominance understood from a geopolitical point of view as a struggle for a unipolar or multipolar model. "Unipolar model" is a figurative term. From a scientific point of view, there is no unipolar model in nature and theoretically, it is impossible to build one in society. The dominance of a state for a short time is a transient phenomenon, but it is not a unipolar model. A bipolar or multipolar model is also not a solution for the survival of humanity because their existence requires an arms race, which with the modern development of technology becomes an existential problem not only for financism but also for humanity.

The question arises as to whether humanity can survive. Theoretically, this is possible but unlikely to happen. The reason for the pessimistic conclusion is that survival requires a change in the system and form of government. In other words, a change of purpose in society’s orientation from *profit* to *efficiency* is needed. We must admit that spending one trillion dollars a year to destroy infrastructure for tens of trillions and millions of victims is not a manifestation of intelligence but a shame for geopolitics and civilization.

The transition from profit to system efficiency means a shift from a hierarchical structure to a network organization that ends wars and arms races; security is determined by morality, which is the immune system of society. This means a transition from democracy to collabocracy. This model is reminiscent of the ecosystems created by nature, and global leadership is replaced by self-governance organized and functioning similar to the cognitive functions of the brain.

Civilization shift means the replacement of global leadership with a collaborative form of self-governance based on a network of virtual think tanks at all levels of social organization. Unfortunately, today the financial elite, the numerous think tanks, the academic community, not to mention the propaganda-poisoned mass consciousness, are unable to realize the essence of the civilizational shift and the inevitability of the collapse of financism and the ruling elite as a system and mechanism of governance.
Conclusion: Geopolitics takes into account only the subjective factor and national interests and ignores the objective factor because it does not know the laws of social development. It is an existential problem that can only be solved if the subjective and objective factors are both studied and takes into consideration the role of the laws of social evolution.

5. The Fifth Basic Law

The dominant form of global governance is a function of the interaction of objective and subjective factors.

The objective vector determining the transitions from autocracy to democracy and the upcoming transition from democracy to collabocracy was partially explained by the need for a more powerful form of intelligence that corresponds to the level achieved in the development of society. The subjective factor reflects the desire of the ruling elite to achieve world dominance. This applies to both the Ancient World and the feudal empires, but it is most clearly manifested in the artificial models of the reorganization of society: communism, Nazism and financism. For the Bolsheviks it was the “World Revolution”, for the Nazis it was the promised “Millennium Reich”, and for the financial elite it was the construction of the NWO with a world government. There are several concepts for this transition: the two-caste model, the Open Society, the Great Reset, and transhumanism. What they have in common is that they are based on a certain ideology, and the problem is that they ignore the laws of social evolution. Moreover, the structure of international institutions and organizations has been built with the idea of a world government in mind, but the mechanism does not work properly. Attempts with color revolutions, local wars, and addressing socio-economic challenges have not given the desired result. These attempts are doomed, but ideologues, geopoliticians, statesmen and the military do not realize it. The reason is that this aspiration is based on the ideology that money can rule the world. The problem is that the objective factor is incompatible with ideologies. The attempt to impose the NWO finds expression in today’s conflict between East and West and is defined as a struggle for a unipolar or multipolar model.

Hundreds of millions of dollars are spent on the propaganda and trillions of dollars are spent on armaments. From the point of view of geopolitics, what has been achieved is a spectacular success. From the point of view of social evolution, this is a decisive step towards the self-destruction of the system. It sounds paradoxical, even absurd, but it is easily explained by social philosophy. This conflict is not a hybrid war, as geopoliticians think, but a civilizational shift. The difference is that conflicts in conventional wars are solved by diplomacy and negotiation, and civilizational changes are the product of the self-organization of the system, where the opinion of the governing elite is unimportant. Relying on propaganda, communism and Nazism also achieved phenomenal success but went down in history because propaganda affects the mass consciousness but is not a factor in civilizational changes. Moreover, self-organization is imposed as a correction of the mistakes of the elite, imposed partly by propaganda. This clash is proceeding according to the algorithm of the First World War and will also end catastrophically for financial empires and global elites. In a civilizational shift, propaganda does not matter, and the manipulative function of money, as well as everything created by man, is transient. Undoubtedly, geopolitics should be based
on objective laws for the development of society, and not solely on the wishful thinking of
the ruling elite.

According to geopoliticians, statesmen and the military, the outcome of the East-West
conflict is determined on the battlefield. According to the objective factor, the end result is
determined by the laws of social evolution, and on the battlefield only the price humanity
has to pay for the ignorance of the financial elite and the greed of the military-industrial
complex is determined. With the destructive power of modern weapons, this price may
prove existential, but if the emerging social consciousness reaches a critical mass before
geopoliticians have turned the conflict into nuclear Armageddon, the civilizational transition
could proceed as a mild influenza.

**Conclusion:** The clash between East and West is not about confrontation but rather about
the emergence of social self-consciousness, the collaboration between nations and the
development of a collaborative mechanism for governing society. However, this topic
requires a separate discussion. *

6. The Corollary of these Laws is that:

The basic laws of governance reveal only part of the essence of civilization shift. The
complete picture can be described by taking into account the role of laws in the other two
subsystems of society—material and spiritual or economy and culture. Nevertheless, the
basic laws of governance reveal the contradictory nature of the subjective factor sufficiently
to avoid fatal consequences for humanity.

In the first half of the 21st century, humankind has been undergoing a civilizational
transition. In the present day, political parties bear resemblance to the religious sects that
existed during the shift from religious to political-social awareness. Today’s think tanks
resemble parliamentarianism before its emancipation from the power of the king. This
transition is a product of social evolution, and the price humanity must pay for its realization
depends on the subjective factor.

International organizations such as the UN, WHO, EU and all the others are ineffective
because they are based on the limited and already exhausted capabilities of collective
intelligence and the operation of fiat money that leads to corruption. Their reorganization
requires them to be based on collaborative intelligence and exclude the role of ideologies and
money in solving problems.

Today’s financial and corporate elite, mesmerized by immense power and control
over resources, propose digital feudalism-like models to assert their dominance, such as
transhumanism, machine civilization, the New World Order, Great Reset for economic
recovery, societal reprogramming, and other logical speculations, without taking into
account the objective course of social evolution. They result in at least a misunderstanding,
not to say plain stupidity, because the authors cannot distinguish technological progress
from social evolution. Technological progress is the work of reason, and social evolution is

*See Manifesto Of The Collaborative Society*
the product of objective laws for the evolution of living matter. These are two completely different variables with much more complex dialectics. It is a topic for another analysis.

Today, humanity has only one problem of paramount importance—survival. Everything else is vanity. The ruling elite bets too much on political power, weapons, money and propaganda, but for social evolution they are irrelevant. It tracks only how far reason is compatible with its laws. The survival of humanity requires a paradigm shift to an ecosystem-like organization, governed by a mechanism resembling the structure and cognitive functions of the human brain. It is a system based on the wisdom of nature.

It is possible that after the last ideological war, a few hundred thousand people, even a billion, will survive, but this will not be the golden billion of the ruling elite but people who passed through the catharsis of surviving that changed their consciousness. It can be defined as social self-consciousness. Social self-awareness is an essential factor in the ongoing civilization shift because global processes do not follow the logic of the rulers but the laws of evolution. Then, like a phoenix, humanity can rise from the radioactive ashes caused by the insanity of the global leadership and build a world without weapons and wars.

**Conclusion**: A civilization that in two thousand years of development has reached the ideals of freedom, equality, fraternity, and the financial elite in only 50 years and has replaced these ideals with greed, selfishness, and hypocrisy, is doomed.

*Author’s Contact Information*

*Email:* tchurovsky@gmail.com
On Crossing the Threshold Towards a Regenerative Economy

Jay Bragdon
Senior Financial Advisor, Montis Financial, LLC; Research Member, Society for Organizational Learning; WAAS Fellow

Abstract

The neoclassical paradigm of political-economic governance today is self-destructing because it subordinates the well-being of people and Nature to the growth of GDP—regardless of the fact that people and Nature are the primary sources of economic value creation. Rather than continuing to put means and ends in opposition to one another, a new paradigm is emerging that succeeds by nurturing these critical “living assets.” Countries that have adopted this new paradigm presently top global surveys on their general prosperity and the quality of their democracies—a trend that has continued for more than a decade.*

While academic studies on the dire threats of climate change, ecosystem degradation and economic collapse concern and scare us, the evidence that will most likely change our behavior is knowledge of this new economic paradigm, which actually works.

According to Thomas Kuhn, the American historian and philosopher of science who introduced the term “paradigm shift” in his book on The Structure of Scientific Revolutions,† paradigms change when:

• They develop anomalies—problems that cannot be ignored until they become self-destructive crises; and
• People begin to recognize a more compelling way forward as they did during the European Renaissance, when a new open (humanistic) order replaced the older hierarchical (feudal) one by virtue of its creativity and contributions to human wellbeing.

The catalyst for change during this earlier time was the toxic culture of 14th century Europe, which caused the death of 40% to 60% of Europe’s population during the Hundred Years’ War and the bubonic plague. Like the failure of today’s neoclassical paradigm, which now threatens all life on earth, the current paradigm of corrupt, self-serving hierarchies has roused humanity’s survival instincts and hopes for a better future.

The corruption of the feudal order arose from self-serving Church dogma supported by a hierarchy of powerful kings and lords that caused widespread poverty and human suffering.

* Annual surveys used in this analysis include those of the Legatum Institute on national prosperity and quality of life plus the Economist Intelligence Unit’s annual surveys on the quality of democracy across the world.
† Thomas S. Kuhn, The Structure of Scientific Revolutions, University of Chicago Press. 1972
Thanks to the scholastic work of St. Thomas Aquinas, who revived the philosophical and scientific ideals of Aristotle, as this old paradigm self-destructed, humanity began to imagine a new way forward.

“Our economies and corporations are sub-systems of life rather than supersystems that transcend life.”

Within this emerging new paradigm people began to think, organize and innovate for themselves rather than in obedience to a higher religious or aristocratic order. This gradual turn of events ultimately gave rise to a new merchant class and craft guilds whose rising economic influence and productivity generated demands for more personal freedom and democratic reforms.

Just as science and reason were critical leverage points in advancing the European Renaissance, the key leverage point in today’s emerging Eco-Renaissance is a growing realization that our economies and corporations are sub-systems of life rather than supersystems that transcend life.

The effectiveness of this new mindset is affirmed by the rising living standards of Nordic countries, which pioneered this new philosophy together with the successes of other geographically diverse countries that have integrated key elements of Nordic political-economic governance.

As revealed in my book, *Economies That Mimic Life*, over the past five decades Nordic countries have become global prosperity leaders by mimicking the egalitarian and self-organizing principles of Nature. In addition, by adhering to these principles, they have also become global leaders in the quality of their democracies. In sum, by attending to the well-being of people and Nature, they strengthen from within the primary sources of their economic value creation.*

**The Power of Success Stories**

Scholars using the meticulous powers of science and reason can effectively expose the anomalies of a self-destructive paradigm; but their cautions are so often couched in abstruse academic terms that they are alien to most people.

Success stories, on the other hand, such as those emerging from the Nordic world, motivate action because people are naturally drawn to learning a better way forward. Moreover, when they can connect such stories to a catalytic leverage point that makes intuitive sense to them, they are more likely to act than if berated by a litany of anomalies, which lead them to despair.

While we value scholastic articles that reveal the anomalies of neoclassical political-economic theory—indeed, our visions of a new paradigm draw on these insights—we

nevertheless believe success stories are more likely to move modern corporate and political leaders across the threshold to constructive action because they kindle a spirit of hope.

“No paradigm is perfect because we humans, constrained by our self-interest, are not perfect. Consequently, our best approach as a civilization is to continually question anomalies when they arise in hopes of making our chosen way forward more sustainable for future generations.”

Returning to Aristotle, we reaffirm that hope for a better future (eulips) inspires courage: the essential attribute required to surpass barriers while pursuing positive change.

That said, we cannot fall into the trap of complacency. No paradigm is perfect because we humans, constrained by our self-interest, are not perfect. Consequently, our best approach as a civilization is to continually question anomalies when they arise in hopes of making our chosen way forward more sustainable for future generations.

In sum, humanity’s most promising pathway to the future is to realize that we are simply one of many interdependent species and that our success inextricably relies on the health of the whole.

Author’s Contact Information
Email: jhbragdon@gmail.com
Reintegration of Capitals & Emerging Global Governance

Erich Hoedl
Former Vice President, European Academy of Sciences and Arts; Fellow, World Academy of Art & Science

Abstract

Industrialism has produced enormous societal resources but its unequal distribution is largely responsible for widespread poverty. To make use of the societal wealth, the divorced financial, man-made, natural and human capitals have to be reintegrated, leading to more equitable global development. Such a transition is confronted with existing power structures and they must be questioned from a holistic perspective given the accelerating globalization toward a global entity. Historical experiences demonstrate that competition among nation-states and between capitals leads to the destruction of societal wealth and the emerging global entity enforces endogenous political and economic cooperation. Reducing hierarchies between financial, productive and human capital and their reintegration is bound to lead to a vigorous augmentation of human capital. Democratization within financial and productive capital will increase the productivity and creativity of human capital. As nation-states have lost influence, the development of human society rests on global democratic governance, which strongly modifies the inherited Bretton Woods Agreements and needs a Global Constitution based on human rights and democracy.

1. Methodological Introduction

During the last two centuries, industrialism has produced enormous economic wealth and its uneven distribution is largely responsible for the global division into areas of poverty and affluence. More equal distribution will preserve existing economic resources and increase the potential for further development of global societal wealth. Through accelerating globalization and declining autonomy of nation-states, the world economy became a highly interdependent whole of different functional subsystems that act largely self-referential, divorce from each other and produce crises. The main divorces are the separation between society and the economy (Polanyi 1944) and within the economy, the mutual separation of financial, man-made, natural and human capital. In the face of economic, social and ecological limits, the emerging global society is endogenously forced to turn from prevailing competition to global cooperation. Nation-states will play in certain areas an important role, but the main driver for global cooperation will be the reintegration of actually divorced capitals. They are internal interdependent networks and their external interrelations result in a global entity that is presently economy-driven and its reintegration into the emerging global society needs a redistribution of global societal power.

The social power of individuals and collectives derives from their material and immaterial properties, the kind of organization of these properties and the values according to which they
are handled. Execution of social power implies a distinction between the actor and its target, which does not apply to rather closed entities because any actor executing power is influenced by feedback and through the interdependence of subject and object, any actor drives and is driven according to its individual and collective power. Therefore, we must distinguish between social power (“Macht”) and societal power structure (“Herrschaft”) (Weber 1922, pp. 122). Investigations of social power concentrate on relations between means and targets and result in rationalistic reductionism. In contrast, the analysis of power structures refers to the interdependence of means and targets and leads to an evolutionary perspective and a transition into a human society depends on a systemic change of power structures.

Through their interconnectivity, power structures have two different implications: on the one hand, through the division of work and their mutual relations, they enormously increase the productivity and performance of a social system. On the other hand, they have oppressive consequences, which have been sketched for long-term industrialization (Popitz 1968). Starting from a rather equal distribution of properties, a group of individuals may have a strong preference for collecting property; they employ specialists for increasing efficiency, which allows higher wages and further accumulation of properties. This increases services for the population, which develops a positive attitude toward the production system and causes them to lose consciousness of the unequal system. It develops with minor control by the large population and results in a capital-centered societal civilization. It does not change until the system produces endogenous economic, social and ecological problems, which creates new consciousness and questions the inherited property distribution, efficiency-oriented organization and prevailing values.

Preserving and developing inherited economic and societal resources need a focus on potentials for further development of productivity and performance without neglecting oppressive tendencies of power structures. During industrialization, increasing inequalities generated state intervention, which promoted capital accumulation and parallel social policies because societal development is not self-regulating and needs some governance. Rather, isolated nation-states intervened primarily to enhance their internal strength, external competitiveness and economic growth. As the emerging global entity faces limits, global governance has to turn from growth to redistribution and allocate societal resources according to a Global Constitution based on human rights and democracy. The agenda of global governance is mainly a redistribution of societal resources within and among global networks of financial, man-made, natural and human capital. Supported by cooperative political and economic policy, democratization will considerably increase societal performance and develop toward a human-centered civilization.

The following considerations concentrate on presently oppressive dimensions of power structures, which impede the democratization of societal subsystems of financial and productive capital and nourish prevailing competition between capitals and nation-states. There are a variety of rather separate strategies for the redistribution of societal power (Hoedl 2018, pp. 142) and accelerating globalization needs a look at their interrelationships. Democratization of financial and productive capital will reduce restraints on the development of human capital and increase its social power. We will marginally refer to the self-empowerment of
human capital and the enormous social energies inherent in unfolding the individualities and aspirations of the large population. Therefore, we discuss primarily restrictions on developing a human society, including the role of economic and political governance. The complexity of these questions does not allow definite answers, but our fragmentary results may contribute to uncovering important obstacles to a transition into a human global society.

“The original role of banks to collect money for real investment a century ago has been reversed and reluctant reforms after the recent financial crises do not question the self-governing global financial system.”

2. Industrialism and the Emerging Global Society

The economic performance of industrialism derives primarily from competition among financial and productive capital and human capital has an auxiliary and subordinate function. In parallel with industrialization, rather well-organized nation-states emerged, which competed in earlier periods of globalization and later during colonialism as rather isolated and partly nationalistic countries for global political and economic influence and only in cases of negative feedback and detrimental spillovers did they move to some cooperation. Far-reaching globalization more than a century ago led neither to more political nor economic cooperation. The outstanding example of the destruction of economic wealth is the 30 years of war from 1914 to 1945. Globalization in 1910 reached about the same level as in 1970 and during World War I and World War II, about a third of all capital equipment was destroyed (Piketty 2014, pp. 146), not to mention the disastrous loss of human resources.

After World War II, industrial countries adopted the more cooperation-oriented Bretton Woods Agreements for re-establishing their productive capacities through the IMF, World Bank and WTO, which increased through mutual investment within the industrial world economic growth with a marginal redistribution of wealth to less performing countries. International cooperation within industrial countries (OECD) and the minor inclusion of developing countries stabilized the uneven global system dominated by the First World. Since the 1970s, overaccumulation of capital in industrial countries has induced more direct investments by multinational corporations with limited “trickle-down” effects. Increasing imports of natural resources and the mercantilist strategies of industrial countries resulted in a large expansion of world trade in developing the enormous natural and human resources in the Third World. The increases in direct investments and global trade augmented the volume of global wealth considerably, with a marginal reduction in global gaps.

Since financialization, the former intention to develop the Third World through increasing transfers of productive capital, development policy has concentrated on financial investments. They led to recurrent crises in Asia and Latin America (Roubini and Mihm 2010, pp. 160) and more recently, to mutually large financial investments among industrial
countries, increasingly in public budgets. In cases of instability, financial capital retracts, worsens crises and spreads to the world’s financial and productive system. The burden of unregulated financial markets has to be borne by the large population both in developing and industrial countries. The 2008 financial crisis is an example of self-referential financial development; divorce from productive capital resulting in unemployment of human capital and high public budget deficits.

The far-reaching separation of society and economy results primarily from the divorces between financial, productive and human capital, which are not material and immaterial quantities but societal relations and interconnected networks with social and ecological dimensions embedded in its cultural environment. Reintegration of divorced capital will reduce the cyclical destruction of economic wealth and societal welfare cannot be increased through higher economic growth but through redistribution. Major hindrances derive from the hierarchy between financial and productive capital and above all from the subordination of human capital. With increasing scarcity of natural resources, the process of global wealth creation became a combination of financial, man-made, natural and human capital. The emergence of a global entity needs a new combination of all capitals.

The present organization of financial capital results from the narrowly defined values of financial wealth holders to make “more money with money” and the optimization of money interest rates. The present organization of productive capital results from narrowly defined economic efficiency and the target to optimize the return on it. The divorce between financial and productive capital increases during economic growth and in the face of global limits, they have to cooperate. Reintegration of capital needs higher human capital for innovation, reduces divorce between society and economy and develops toward a more human society. This evolution must be underpinned by a global democratic governance and the experiences of the post-war period demonstrate the deficiencies of the Bretton Woods Agreement.

The development toward a global entity needs a holistic view and global wealth creation is in clear contrast to mainstream economic theory, which explains production as a combination of quantitatively defined capital and contributes to further divorces between society and the economy. Societal and economic welfare derive from the highly interdependent actions of humans and the resulting entity augments the productivity and creativity of each participating individual and collective. In a systemic view individual actions are more than their sum, include the whole environment and cannot be defined by one scientific discipline (Etzioni 1968, pp. 19). Actions have inter- and transdisciplinary implications and must be approached from a systemic perspective, which has a long tradition (Capra, pp. 293). As we consider the emerging global society as an interdependent whole of different societal subsystems, we look closer at their internal relations, their external divorces and some strategies for their reintegration.

3. Reintegration of Capitals and Increase in Societal Wealth

Reducing economic growth in industrial countries and augmenting it in less developed regions increases overall global economic and societal wealth. The decreasing utility of consumption in the First World and the production-enhancing effects of increasing direct
investments in developing countries narrow global gaps and tend to create an equal global entity. However, transferring primarily financial capital may not increase real production in developing countries because of a lack of human capital. Outflows of productive capital from industrial countries may produce crises here and spillovers to the global economy may hurt the emerging global entity. A transition into a human global society has to observe the interdependencies of different forms of capital, their regional placement and the political and cultural environment. For the unavoidable reduction in global economic growth, well-balanced transfers of capital to less developed regions will activate their huge potential of natural and human resources and considerably increase global wealth. Mainstream economics leave these structural adaptations to supposedly free markets and through this, defends the basic inequality of global capital distribution.

For more than a decade, the divorce of financial capital from real production has been strongly enhanced through financialization. The global financial network collects savings surpluses, up-stream savings and nearly unlimited money created by private and public banks, resulting in huge debts. Central banks furnish enormous quantities of artificial money into this network, reducing money interest rates with a marginal increase in real investment. The largely self-referential expansion of money flows between all kinds of financial institutions leads to extensive speculation, off-shore allocation in tax oases, and luxury investments, while real productive investment is degraded to just one alternative in financial portfolios. The original role of banks to collect money for real investment a century ago has been reversed and reluctant reforms after the recent financial crises do not question the self-governing global financial system. Instead of some democratization the subsystem develops with marginal legal restrictions nearly without control by financial wealth owners. The development derives from the values of financial wealth holders to make more money with money, the functionally adapted organization of financial flows and the self-referential growth of financial capital.

The introduction of a common global currency and a conversion of the existing IMF and World Bank into a world central bank (Cooper 1987) would reduce global transaction costs, but it would also increase the societal power of global financial capital and dominate productive and even human capital. Currency is a crucial competition instrument and a world currency needs far-reaching regulation and cooperative behavior. We have to expect a multi-currency system with tendencies toward a few large global regions, which may facilitate fundraising for more inner-regional equality. Some decentralization of globally interlinked currencies may be complemented through parallel currencies oriented toward the implementation of SDGs and will not require a common global currency. Raising globally and regionally abundant financial capital and its productive investment will equilibrate highly and less industrialized regions. The Marshall Plan tamed politically the Russian expansion and economically it had the combined effect of restoring production capacities in Europe and creating employment for homecoming soldiers in the USA (Eichengreen 2011, pp. 39).
Economic success derived mainly from the availability of human capital and democratic governance in participating countries.

“Education has to enhance individual and collective freedom, develop existing potentials of cooperative behavior and increase consciousness of the oppressive dimensions of prevailing global development patterns.”

More equal global development is increasingly impeded by rather developed countries like China, which make large investments in natural capital in low performing countries. Industrial countries have an obligation to refund partly the costs of former colonialism, but the productive use of incoming financial capital finds in many cases no adequate property rights and political stability. In the era of globalization declining national sovereignty is coupled with increasing responsibility to evolve domestic economic and political governance structures. A holistic view cannot minimize the dramatic failures of national political and economic governance in developing countries and isolated criticism of industrial countries will only partly enhance global cooperation. Abundant global financial capital in industrial countries is in search of real investment opportunities and some developing countries make the process more difficult through domestic inequality and some nationalistic understanding of national sovereignty.

Productive capital, composed of man-made and natural capital, is strongly interconnected through similar global consumption patterns, comparable production technologies and the worldwide network of energy and material supply systems. Many final products are composites of globally distributed supply chains and an increasing number of large and small firms produce and sell them in many countries. Global interrelations are influenced by financial markets, but productive wealth creation develops toward a global whole and increases its productivity through its interconnectivities. Smaller firms participate in partly oligopolistic markets and together with the rapidly growing alternative sector, real production moves toward a globalized, real productive system. Through the recurrent substitution of labor by productive capital, societal influence on human capital increases. The self-referential development of productive capital increases supply and omnipresent advertising augments consumption demand. The main driver of the self-referential growth of productive capital is the optimization of return on capital and an increase in consumption is a consequence of it. More final demand can increase production, but ultimate decisions depend on the availability of productive capital and trade is not more than an additional strategy for economic development. An increase in standards of living in developing countries depends primarily on transfers of productive capital.

A main contribution of industrial countries to global reintegration of capital will be a transition into a socio-ecological market economy (Hoedl 2014, p. 84). Observing the global limits of natural capital and partly substituting through an increase in man-made capital
will reduce economic growth. Through widespread innovation within productive capital, employment in hours declines, but needed higher qualification augments the value of human capital and labor intensity of production will increase. Declining economic growth in industrial countries allows higher exports of productive capital to less developed countries instead of mercantilist expansion. There already exist a variety of nature-saving and employment-increasing technological approaches, like circular, sharing, green and blue economies that contribute to sustainable development. Socio-ecologically oriented productive capital transfer will lead to more equal global development.

Transferring productive capital to less developed regions will reduce constantly increasing migration. Mainstream economic theory supposes the inflexibility of productive capital and the movement of labor to high-performing regions (Mundell 1961, pp. 662) and obscures the view on interconnectivities through globalization. Global reintegration of capital will reduce migration considerably, but several countries erect physical and administrative borders at high costs instead of transferring productive capital to less developed areas. For example, the European Union was too occupied with its own integration while neglecting its relations with Africa and nationalistic tendencies in the USA reversed its former openness. Moving human capital weakens human potential in developing countries and activation of their natural resources is left to foreign financial investors.

The reintegration of global financial and productive networks needs internal consolidation and external cooperation. Internal consolidation of financial capital goes through a considerable reduction of artificial money, but the quantity of money should be higher than the prevailing level of global production because money can initiate real production. Transferring abundant productive capital through increasing socio-ecological-oriented direct investment activates natural and human capital in less developed areas. Enhancing cooperative development depends to a large extent on political cooperation between concerned nation-states. Several nation-states, mostly in the least developed regions, have fragmentary democratic structures and incoming capitals are endangered through corruption and possible civil wars. Uncertain property rights contribute to an irrational abundance of capital from highly developed countries. There is marginal cooperation between developing and industrial countries and chaotic migration may change toward cooperation. The lack of democratic structures in less developed countries is an important cause of the still strongly biased Bretton Woods Agreement, and its modification cannot be successful without widespread democratization of the Third World.

4. Increasing Human Capital and Social Innovation

Increasing human capital in developing countries is crucial for attracting foreign productive capital, capital-saving innovation in industrial countries sets free productive capital and global reintegration of capital depends largely on human-centered education systems. Unfolding creativity and productivity and its development toward cooperative behavior is actually restrained by existing power structures and capital-centered educational systems. Instead of reproducing prevailing educational values and a competition-oriented strive for higher economic growth, education has to enhance individual and collective
freedom, develop existing potentials of cooperative behavior and increase consciousness of the oppressive dimensions of prevailing global development patterns.

Any social system develops through its interrelations with a minimum of hierarchy and depending on its inequalities, it has oppressive consequences. Capitalistic industrialization reproduced its power structures and consciousness until severe irrationalities changed the mindset of the large population and led to new actions. From an individual perspective, peaceful actions strive primarily toward more freedom and collective actions are framed in the classical triangle of freedom, equality and solidarity. Such ethical norms are an important part of most national constitutions, but their real implementation lacks in many respects. Idealistic interpretations of freedom deny the relevance of individual economic endowment (Hayek 1944, p. 46). In contrast, more freedom needs a minimum of economic endowment and “Development as Freedom” (Sen 1999) has to transcend the narrow economic role of human capital, refer to its role in societal change and perceive human societal development as a consequence of individual and collective freedom.

Arguments against increasing individual freedom and fears of chaotic development originate from the early Enlightenment (Hobbes) and therefore classical political economy is strongly linked to the “Theory of Moral Sentiments” (Smith). The general openness of societal development is always framed through some morality, macro-coordination and tendencies toward over-boarding governance that impede morality, individual productivity, and creativity. Historical experiences with different kinds of totalitarian regimes demonstrate declining social innovation and reduced wellbeing. A reduction in macro-governance raises the question of whether more freedom tends to be stronger competition or if individuals are intrinsically motivated to have more empathy and cooperation. Biophysical theories detect that free people tend much more to cooperation than to competition and enhancing positive individual empathy spreads over to the collective and contributes to a peaceful society (Nagan 2018, p. 72). Brain research discovered that mirror neurons increase human potentials for common understanding in an intersubjective space, which enables cooperative behavior (Brunnhuber 2016, p. 44). These preliminary results indicate that cooperative behavior is primarily impeded by the unequal distribution of properties, its specific organization and the inherited value system.

Oppressive implications of societal power structures are visible through consumerism, in which work is considered a means for the further consumption and not for realization of human life (Jackson 2009, pp. 100). Even in cases of bad working conditions, the labor force accepts more working time and regards higher consumption as adequate compensation. Since wages are far above the costs of reproduction of individual working capacity, irrational consumption patterns impede personal development and inverse the relationship between work and consumption. High consumption may create some empathy through sharing, but increasing competition in production leads to diverse health problems. Prevailing production processes are significantly influenced by the cooperation between financial capital and the firm’s management instead of cooperation between management and workers and the needed increase in human capital serves primarily for higher economic efficiency. Curative innovation, like flexible working hours etc., will reduce stress but not inverse over-boarding
consumption in favor of increasing quality of life and human-centered wealth creation. The dominant characteristic remains competition, which overlaps strongly with the potential for unfolding human empathy and degrades social and economic innovation.

Developing more cooperative behavior and empathy depends to a large extent on the consciousness of partly unavoidable restraints of freedom through some oppressive power structures and bureaucracies. Unveiling these restrictions became more difficult through conservative mind-setting information, including marketing strategies and uncritical social media, which reproduce existing consciousness and confirm basic societal power structures. The most difficult part of intellectual perception has always been to understand what is going on at present and what the individual and collective aspirations are. In periods where societal problems multiply and uneasiness increases, fragmentary anticipation of the population tends to a new view on the world (“Weltbild”) and will change mindsets, individualities, oppressive structures and technologies toward a real democracy (Jacobs et. al. 2018, pp. 20). Innovative thoughts that reflect the conscious and unconscious motivations of the large population are a strong societal power. “… the power of vested interests is vastly exaggerated compared with the gradual encroachment of ideas” (Keynes 1967, p. 383). Consequently, human-centered education and adapted educational systems, including universities, will have a leading role within the triangle of properties, organization and values.

5. Toward a Democratic Global Governance

The development of global society toward an entity needs a holistic governance structure that influences economic, political and cultural developments and has to be an integral part of the global entity. Global governance has to drive global financial and productive capital networks towards their reintegration. Reintegration is also driven through self-referential and interrelated development. Political and economic governance has always had a limited influence on highly interrelated vested interests. The regulatory capacity increases through democratization of networks of capital and democratization of governance structures reduces the distance between them and converges toward a real democracy, as the whole society becomes increasingly governed by human capital. Democratization goes in parallel with an increase in human capital and they amplify each other. More democracy and increased human capital integrate financial and productive capital and increase human-centered global wealth. Envisioning a traditionally organized world state or a world economic corporation (Suter 2018, pp. 33) is in contradiction to democratization and the formation of human capital as a countervailing entity makes no sense. Human capital cannot be organized in a comparable way as financial and productive capital, which would seriously endanger individual freedom and reduce creativity and productivity. A loosely coupled and fragmentary national organization of human capital through trade unions, civil society and some political parties is necessary, but the development of global human capital has to concentrate on unleashing human potential through more freedom.

Prevailing global economic governance follows mainly the self-referential evolution of financial and productive capital and political governance is partly subject to the dynamics of economic evolution. For example, declining national economic performance induces
right-wing policies, which impede democratic political governance and a reversal depends mainly on more economic equality. The inherited global economic governance contributes marginally to increasing global equality. The IMF and World Bank are financed through national contributions and raise additional credits from financial markets so that both are integrated into the global financial system and they are just intermediary institutions for the temporary reduction of public and private financial difficulties. Global financial capital is nearly entirely controlled by large financial wealth holders with marginal democratic control and “the markets” influence the configuration of the WTO, which largely accepts global oligopolistic market structures and partly inhuman production processes.

Prevailing economic governance is limited to macroeconomic regulation, with minor conceptual evolution to special drawing rights, links to the Financial Stability Forum of G7/G20, etc. Considerable progress would be steps towards a “New Social Contract” (Stiglitz 2006, pp. 335) with more participation of developing countries in governing bodies. Regulation does marginally influence property rights or ameliorate the deficient democratization of national governance. Presently, the IMF and World Bank are linked to financial capital and the WTO to productive capital, but there is no comparable institution for developing global human capital. Industrial countries pay attention to human capital within the OECD and develop concepts and strategies primarily for capital-centered needs. A global strategy for human capital development must transcend these barriers and enhance human-centered education.

Global political governance is mainly institutionalized in the United Nations and its specialized sub-organizations. It represents an important global network and for a few decades, its political influence has increased through cooperation with bottom-up initiatives of civil society. The decisions on the SDGs represent considerable progress. However, the General Assembly and the Security Council are the representatives of nation-states and their decision-making power is not only concentrated in industrial countries, but also national legitimation has partly weak democratic foundations. Many national democracies are questioned for their difficulties in channeling legal and legitimate informal interests in existing national political governance structures and political parties tend to plutocracies and isolate themselves from direct communication with the large population. The further development of global political governance depends to a large degree on the establishment of real democracies in all nation-states. The future role of nation-states will not only diminish through economic globalization but also through deficiencies in existing representative democracies, which increases the influence of capitals and weaken fragmentary global political governance.

The emergent global entity needs the integration of largely separated economic and political governance structures. Prevailing financial governance restrains itself to a marginal correction of volatile financial flows and does not marginally restrict the property rights of financial wealth holders. The governance of real productive capital is left to global oligopolistic market structures with minor regulation through standards for production processes and products. Fragmentary global political governance is influenced partly by highly deficient democratic procedures in nation-states. Far-reaching organizational reforms of political and economic governance and their integration should not result in a large
common global institution, which would increase the distance between nation-states and the population. Evolution toward a global democracy needs decentralized and coordinated institutions promoting a simultaneous change of properties, organization and handling values. Political governance through voting has to be extended to economic democracy with a minimum of individual economic endowment. The organizational transmission of the will of the population has to integrate legal and informal legitimate interests based on the values of democracy. Financial governance has to question the maximization of money, interest rates and the largely self-referential organization of money flows. The governance of real productive capital has to install socio-ecological standards and humanize production processes. Increasing responsibilities of capital ownership need more restrictions on property rights, which actually have, in many respects, priority over human rights. Inverting this relation will enlarge the freedom of individuals and collectives and an active society needs all of its individuals to have more political and economic rights. Freedom is not an idealistic concept; it depends on the societal and cultural environment, which will in the future largely be influenced through the distribution of properties and property rights.

6. Conclusions and Perspectives

The emerging global society can be grasped through a holistic approach and the future global entity needs widespread democratization of present fragmentary political and economic governance. Whereas long-term industrial development was based on competition, the emerging global entity enforces cooperation, which concerns mainly the divorced societal subsystems of financial, productive and human capital. Their reintegration preserves societal wealth and their further development rests on a vigorous increase in human capital. Democratization will reduce the oppressive implications of prevailing power structures and augment the creativity and productivity of human capital. This needs a global redistribution of properties, human-centered organization and the enhancement of democratic values. Fragmentary global political governance has to be anchored in a Global Constitution based on human rights and democracy and enlarged from presently voting to economic democracy. Economic governance has to extend to human capital development, deepen its instruments from flows to stocks, give priority to human rights over property rights and correct the self-referential divorces of financial, productive and human capital.

A transition into a human society is a gradual process enhanced through the democratization of capital networks and governance structures. A more equal distribution of societal power increases human capital enormously. Redistribution of ownership will result in new forms of property, increase organizational decentralization and lead to more societal cooperation. More freedom results in open societal development and reduction in oppressive societal relations increase individual and collective responsibilities. Developing human capital and unfolding its cooperative behavior will accelerate development toward a global human society.

Author’s Contact Information
Email: erich.hoedl@aon.at
Bibliography

What to do about the Persistence of Inequality?

Neantro Saavedra-Rivano
Professor Emeritus, University of Tsukuba; Fellow, World Academy of Art & Science

Abstract

The focus of this paper is income inequality and, more pointedly, its persistence throughout generations. In the spirit of Atkinson (2014, 2015) and Roemer (1998), we take a normative stand and make concrete proposals to combat the persistence of inequality. In the view presented here, those inequalities derive, to an important extent, from inequalities in opportunities, themselves arising from “abnormal” differences in human capital endowments. The proposal developed in the paper relies on financial markets to complement extant government transfer programs and open universal access to services required for the formation of human capital.

“To combat inequality, it is important to find ways to offer universal access to services needed to build the human capital of young individuals.”

1. Introduction

The focus of this paper is income inequality and, more pointedly, its persistence throughout generations. We do not devote much space to a general discussion of these concepts, having nothing to add to the excellent work of Alacevic and Soci (2018), Goix (2010), and Piketty (2000) among others. Our discussion takes place in the context of a national space and, although much of what is said would apply to all countries, we will have in mind developing countries. As the title of the paper suggests, we take instead a normative stand, in the spirit of Atkinson (2014, 2015) and Roemer (1998). While acknowledging the important contribution of Atkinson, who directed his proposals to combat the inequality of outcomes, we tend to side with Roemer in recognizing the overall importance of the inequality of opportunities. That choice leads us to an examination of the role that “abnormal” differences in human capital endowments have in generating inequality of opportunities and, eventually inequality of outcome and income. In answering the title question we thus come to the realization that, to combat inequality, it is important to find ways to offer universal access to those services needed to build the human capital of young individuals.

Those ideas are presented in greater detail in sections 2 to 4. Section 5 discusses a possible solution to the problem of offering universal access, namely the expansion of
existing government programs and the use of transfer policies and explains why that kind of approach would be unfeasible on political and economic grounds. The remaining sections constitute the core of this paper, and they discuss an alternative way to enable universal access to human capital formation services. Put succinctly, the proposal consists of using the financial markets to purchase IOUs issued by young individuals to fund their human capital formation. Section 6 exposes this proposal, which was first put forward in Saavedra-Rivano (2016), and sections 7 and 8 discuss the implications of the proposal for the economy and society more broadly, as well as ways to deal with them.

“It is hard not to recognize that inequalities are, to some extent, unavoidable. Indeed, as pointed out by some authors, some degree of inequality is needed for the working and advancement of a capitalist economy.”

2. The Roots of Inequality and its Persistence

Throughout the history of mankind, inequality has been a common trait of all civilizations. Its existence and persistence have attracted the attention of philosophers,* anthropologists, political scientists and, lately, economists. There are also inequalities among countries and, indeed, practically any stratification of a given country or society will let us observe inequalities among the resulting strata: regional, gender, and ethnic inequalities. Although this paper focuses on income inequality, other dimensions of inequality are no less important, such as wealth inequality and political inequality.

It is hard not to recognize that inequalities are, to some extent, unavoidable. Indeed, as pointed out by some authors, some degree of inequality is needed for the working and advancement of a capitalist economy.† At the same time, most people would agree that the currently observed level of inequality in most countries is excessive.‡ In their recent study, Chacel and Piketty (2021), using the WID database, document a steep rise in income inequality during the period from 1980 onwards in many countries, including China, Russia, India, South Africa, the USA, and most Western European countries.

Perhaps more undesirable than (excessive) inequality is its persistence from one generation to the next. The persistence of inequality has been observed by several authors, among them Atkinson (2015), FitzGerald, Heyer and Thorp (2011), and Boix (2010). Several explanations have been offered for this phenomenon. In his review of the subject, Piketty (2000) provided a thorough examination of economic and sociological theories behind these explanations. Atkinson (2014, 2015) went beyond explanations and developed a set of policy proposals designed to reduce income inequality. Another author who adopted a policy-oriented attitude

---

* An early discussion of the causes for inequality is to be found in Rousseau (1754)
† A representative view can be found in Cowen (2013)
‡ Atkinson (2014)
is Roemer (1998), who has written extensively about the inequality of opportunities. In Atkinson’s interpretation, there should be no confusion between inequality of opportunities and inequality of outcomes and, while he does not deny the importance of the former, his proposals are geared towards the latter.

In this paper we will emphasize the importance that inequalities in opportunities have in the persistence of inequality. Moreover, in our view, an important factor behind the existence of inequalities in opportunities is the disparity in levels of human capital among individuals. Opportunities are not equal for all because of the “abnormal” differences in human capital endowments which, in turn, arise from the lack of universal access to education and other services needed to accumulate it. By “abnormal” we mean differences that could not be explained by the innate differences between individuals.

In brief, wealth and income inequality among families preclude their offspring from acquiring skills in such a way that a “playing field” would exist in the succeeding generation. It follows that one way to address the persistence of inequality is to create conditions that would ensure universal access to human capital accumulation.

3. An Aside on Human Capital

It has been some sixty years since the notion of human capital was rediscovered through the seminal writings of Theodore Schultz and the empirical and theoretical work of Gary Becker. Researchers dealing with the Economics of Education, Labor Economics, and the emerging economic theories of the family and the household swiftly adopted the concept. In the late 1970s, the concept of a heterogeneous and malleable human capital became central to the development of endogenous growth theory. The need for empirical validation of these theories provided, in turn, added impetus to statistical research on the measurement of human capital stocks, their international comparability, and the rates of return to investment on human capital.

Human capital is by now a well-established and respectable concept in Economics, but there is a multiplicity of meanings associated with it. Most precise definitions are consistent with the view that human capital is a form of capital and that, as such, it is used for the sake of production, and it can be accumulated. Differences exist, though, in the breadth of the concept. Business Economics adopts perhaps the narrowest definition, emphasizing on-the-job training and those skills that are useful in the context of the firm. In Labor Economics human capital is often defined as the accumulated stock of education of the individual or society and, indeed, most measures of human capital stocks and rates of return on investment on human capital correspond to this view. The broadest approach comes from Development Economics. It encompasses the knowledge and skills helping the generation of utility from the perspectives of the individual and social collectives, including the enterprise. A good example of such a definition is that adopted by the Organization for Economic Co-operation and Development (OECD), namely that “human capital is defined as the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal,
social and economic well-being”. In what follows we will follow this definition as being the best adapted to our purpose.

Ever since the 1961 AEA Presidential Address by Theodore Schultz, investment in human capital has been acknowledged as one of the most important factors behind economic development. As he pointed out, many spending items that are commonly considered to be consumption expenditures are indeed investment (in human capital) expenditures. National accounts have not yet caught up to this insight and, undoubtedly, this has to do with the ambiguity surrounding the concept of human capital. To be consistent with the broad definition of human capital that we have adopted, investment in human capital for a given individual will be deemed to comprise the entire sum of expenditures needed to nurture him or her from birth to working age. This is indeed the cost needed to incorporate a human being into society and, more specifically, into the labor market. If we consider human capital as the output of this process of formation, the most important inputs to be considered are education, health, and nutrition.

4. Redressing Inequalities of Opportunities

It follows from the preceding discussion that an effective approach towards the correction of the persistence of inequalities and, eventually, moderate inequalities themselves, is to address the inequalities in human capital formation. We will focus our discussion on investment in the human capital of the young and, for the sake of the exposition, consider investment from birth up to adulthood. As noted, and thoroughly developed by James Heckman and his collaborators, investment in human capital at earlier ages is significantly more cost-effective than at later periods of life.

An obvious way of dealing with inequalities in human capital formation is to offer universal access to the services needed to build human capital. Education takes the first place, but also auxiliary services such as health and nutrition. Without addressing, for the time being, the highly nontrivial question of financing, we need to point out that the offer of universal access to these services is not sufficient by itself. Two other conditions are required: homogeneity of services, and compensation for family environment and background.

The first condition means that the quality of services provided must be independent of the place where they are offered. The second condition is also crucial, because family environment and background have a powerful impact on children and, in the worst case, may offset the effect of education at school. Complementary programs, addressed towards adult family members, must be designed to prevent negative effects of family background and environment. Of course, these effects will only be fully mitigated in future generations as family heads will have themselves benefitted from HC formation programs. Fulfillment of these conditions goes towards ensuring that only innate differences between individuals would cause differences in human capital formation.

* Organization for Economic Co-operation and Development (2007)
† Schultz (1961)
‡ Representative works include Heckman (2006), and Cunha and Heckman (2007)
5. The Redistributive Approach and its Shortcomings

Offering universal access to human capital services is a daunting financial proposition in any country. Rather perversely, the poorer and more unequal the country the harder to finance that sort of program. This happens for two main reasons. First, poorer families do not have the means to pay for the proper formation of their children and many of them barely maintain a subsistence level. Second, the government also lacks the necessary resources to provide reasonable education and health services to everybody and the quality of those services lags that of similar services offered by the private sector.

Of course, given that governments already offer public education and health services, an obvious route would be to expand those services in such a way as to reach universal access of homogeneous quality, and to complement those services with programs offsetting negative effects of family background and environment. There exist already some programs acting in that direction in several countries, usually taking the form of conditional cash transfer (CCT) programs.*

These government policies are undoubtedly important and necessary, but it is unrealistic to expect that all countries, especially more unequal ones, would be able to expand them to the extent that is needed. That would require massive transfers of income from the wealthier groups to the poorer ones of a magnitude that is economically and politically unfeasible. To give context to this statement, let us give some numbers. In 2018, according to the OECD Education Statistics,† each Chilean student enrolled in primary school cost 22% of per capita GDP, considering public and private expenditures. The figure was 14% in Mexico, while the OECD average was 21%. A related set of figures comes from a USDA study on the cost of raising children in the United States. The estimated cost, in 2015, of raising a child from birth to age 17, was about US$ 230 thousand, for a middle-income family with two children. Relatively to their before-tax income, households in the lowest income group spent 27 percent per child, those in the middle-income group 16 percent, and those in the highest group 11 percent. These costs include not only education, health, and nutrition, but other costs as well. Education accounts for some 16% of total cost.

Clearly the size of transfers needed to pay for universal access would strain political systems beyond their limits. In addition, in purely economic terms, the resulting increase in taxation would deter private investment essential for the working of a capitalist economy. We can thus conclude that there are both economic and political arguments rendering transfers of the required magnitude unfeasible.

6. A Market-Centered Approach

The preceding discussion shows that, in the case of developing countries at least, there are two factors preventing (uniform) universal access: the inability of most households to afford it, and the financial/political unfeasibility of the government to provide it. There is, however, another way in which the current generation could provide this kind of access to the next

---

* See World Bank (2009)
† See Organization for Economic Cooperation and Development (2021) and OECD Stat (2021)
generation, and this is lending. The financial markets, which handle large volumes of resources and are guided by the criteria of profitability of their investments, are certain to play a large role in this option. Investment in human capital undeniably stands to become one of the most profitable ventures and this raises the question of how to attract investment flows towards the financing of human capital. The key to successfully face this challenge is a combination of non-reimbursable programs (transfers) and reimbursable programs. The latter would be directed to finance the formation of those elements of human capital that directly increase the potential of their holders to generate wealth, such as education and the acquisition of other productive capacities. The simplest method to finance this investment involves the issuance of impersonal (anonymous) securities by the beneficiaries. These titles would be centralized by a public body responsible for the administration and supervision of the system created for this purpose. They would be traded in financial markets and redeemed by the beneficiaries themselves once the investment begins to pay off. This option offers several advantages. First, the anonymous nature of the securities, in addition to the dissemination of risk among a broad universe of beneficiaries, allows any individual, regardless of their family status, to have access to this type of financing. Thus, access to the services needed to form human capital is enabled for all children, regardless of the income and wealth of their families. In this sense, the scheme allows for progress in bringing about equality of opportunities for all newly-born individuals. Milton Friedman had already noted this effect as a consequence of his proposal to have the central government take equity stakes in individuals through the financing of their vocational education. Second, investment in human capital through these human capital (HC) securities meets the interests both of investors and beneficiaries, thereby eliminating resistance from the most privileged sectors of society to programs promoting the development of human capital. Third, the development of human capital of the population has a powerful effect on economic and social growth: in the short term, the expansion in demand for goods and services; in the medium and long term, full realization of the potential of the country.

Some immediate remarks are in order regarding the acceptance and feasibility of this scheme. The securities in question, in addition to their overall supervision by a government body, would need to be guaranteed by the government, at least in the initial stages, to ensure their acceptance by investors. In addition, some countries are too poor or lack an adequately developed financial system to finance these HC securities. One possibility, in this situation, is for international financial institutions, including international development banks, to become investors (or providers of guarantees) in the development of the human capital of a country.

In an extreme application of the proposed scheme, all the costs of raising children would be financed through the issuance of these HC securities. That would correspond to substituting the current dynastic system of human capital formation with a generational system and replacing donations to children (the current system) with loans to be repaid during their adult lives. In other words, the current generation would invest in the next generation.

---

* This proposal is developed in more detail in Saavedra-Rivano (2016)
† Friedman (1955), p. 143. Of course, constraining this kind of scheme to vocational education limits the scope of its application to those individuals who were able to reach that level of education
7. A Disruptive Scheme: Benefits and Difficulties

The scheme proposed has two important benefits. First, making possible universal access to services of homogeneous quality needed for human capital formation of new generations. And second, beyond the impact on individuals, realizing the potential wealth of a country as embedded in its people.

On the other hand, it must be recognized that, if implemented fully, this method of providing universal access will have a massive and profound impact on many spheres of social life. By “full implementation” we mean that all expenses needed to raise all children from birth to adulthood would be financed through the issuance of HC securities. We can distinguish systemic, economic, political, and social impacts. Systemic impacts are probably the easiest to deal with and have to do with the management of a system that would contemplate millions of daily transactions by millions of individuals generating IOUs and their anonymization and conversion into marketable financial securities. This looks daunting at first but is not very different from what credit card companies and payment processors do routinely. The economic impact is more serious and indicates clearly that any implementation of the scheme must be progressive. On the microeconomic level, the empowerment of previously destitute children will generate an immediate huge increase in demand for goods and services associated with proper human capital formation. The corresponding adjustment in supply will be far from immediate and, in some cases, such as the supply of good teachers and physicians, will take years. On the macroeconomic level, one important effect will be on the financial markets as they accommodate and possibly expand to handle the increasing supply of HC securities.

The impacts presented so far are rather technical and easier to deal with than the political and social impacts. Among the latter, it is undeniable that the implementation of such a system deepens the bond between the individual and society to an extent that might be considered extreme by some. Whereas in the current dynastic system of HC formation individuals have at most a moral debt towards their parents for having provided for their needs during early age, in the proposed system individuals would instead have an actual debt and the associated legal obligation to service and repay it. A second related issue is the ethical objection that some might have towards the perceived constraints on individual freedom implied by the scheme. Clearly it would become more difficult for anybody to break away from the social system. Finally, intra-family relations stand to be impacted by this scheme. At least in Western societies, the decay of the family as an institution is a well-recognized and often lamented fact. The transfer of the economic cost of the upbringing of an individual from the parents to the individual proper has a clear potential to further weaken parental authority. These are all difficult issues for which it would be presumptuous to claim proper answers at this moment. We could perhaps say that society has been evolving through the ages and that, whenever faced with choices that combine higher welfare with deeper forms of social organization and control, it has generally adopted them.

8. Issues of Implementation: A Softer Strategy

The discussion in the previous section makes abundantly clear that a full implementation
of the proposal is unfeasible. It seems clear as well that a progressive and flexible approach towards its implementation is needed. Regarding the systemic issues, an adequate management system needs to be designed, tested, and eventually put in place. The economic issues mentioned before suggest that implementation needs to be done in a progressive and modular fashion. For instance, the system might cover, initially, only a given percentage of certain components of expenditure (say, education and health). Alternatively, initial coverage could be limited to disadvantaged sectors of society. The point is that implementation of the scheme should be done in such a way that the many parameters on which it depends (categories covered and percentage of coverage, segments of society, final age of coverage, just to mention the most obvious) are adjusted to take account of the inertia of the economic system. Those parameters could be increased progressively, and eventually, full implementation would be attained.

Another important consideration for implementation is that existing transfer programs should not be ignored. Issuance of HC securities should complement those programs and, as pointed out before, must be directed to finance the formation of those elements of human capital that directly increase the potential of their holders to generate wealth, such as education and the acquisition of other productive capacities.

9. Concluding Remarks

Research on inequality has surged in the past few decades together with the perception of worsening inequality within countries. This worrying trend has been empirically demonstrated in the work of Piketty and his collaborators (Chacel and Piketty, 2021, and World Inequality Lab, 2017) for developing as well as developed countries. High levels of income inequality combined with low growth rates in developing countries lead to an increase in poverty and a deterioration of the living conditions of the middle classes. Neither of these outcomes bodes well for political stability in those countries.

It is hard for a socially aware researcher to remain impassive when confronted with this situation and we are naturally tempted to use the tools of research for the design of solutions. The title question of this paper is of course very difficult to answer, and we cannot pretend to have offered here a fully satisfactory solution. Inasmuch as the ambitious proposal outlined seems to be technically feasible, the social and political obstacles to its implementation are formidable. This does not mean, in any way, that the idea should be discarded but instead that it must be advanced with utmost care. As in most if not all crises, and apparently the income inequality situation is not yet critical in most countries, solutions to an unfolding crisis are implemented only after it has reached a point of no return. In that sense, this proposal is presented here as a possible answer to a looming crisis.

Author’s Contact Information
Email: neantro@sk.tsukuba.ac.jp

Bibliography
Hard Times:
The Thinking Crisis in the No-Knowledge Society

Piero Dominici
Scientific Director, International Research and Education Programme CHAOS;
Fellow, World Academy of Art & Science

Abstract
The “new” digital (hyper) velocity, in its complex interaction with the human factor and with social relations, preserves the original ambivalence common to any “factor” of change and to any social and cultural process. The complexity of this interaction, apart from representing an extraordinary opportunity, also evades any kind of algorithm or other artificial intelligence systems. The ambivalence and complexity that expose our limits and inadequacies, which have been socially and culturally “constructed” precisely through the teaching and training from within our educational institutions, are still incapable of taking in the ongoing change and, what is more, of providing a working translation of the widely acclaimed “paradigm shift.” Even more significantly, the “new” digital (hyper) velocity, with its baggage of ambivalence and complexity, aside from underlining our personal, organizational and social inefficiencies, truly leaves us with very little time for reflection, for thinking, and even more, for a critical analysis of what is happening, and more generally for a critical analysis of (hyper) complexity itself, as it continues to reveal the radical inadequacies of our paradigms, of our interpretative models, of our traditional cultures as well, and in particular, of our modern instruments of management and control.

“Uncertainty is the natural habitat of human life—although it is the hope of escaping uncertainty that is the engine of human pursuits. Escaping uncertainty is a paramount ingredient, even if only tacitly presumed, of all and any composite images of happiness. This is why ‘genuine, proper and complete’ happiness always seems to reside some distance ahead: like a horizon, known to retreat whenever you try to come nearer.”


Hard times, very hard times, for thinking, for those who propose engaging in thought or a thought system, for those who “think”, attempting to get away from certain too reassuring or too catastrophic narratives, for those who think tangibly (almost an oxymoron in these days), that in order to re-start (a mechanistic metaphor) and truly think ahead in the long-term period, it is necessary or it would have been necessary to radically tackle education and research on education and on didactics. Hard times, very hard times, so critical, so daunting, that have given new impetus to age-old narratives, simplified, reductionist and deterministic narratives, including those on the digital and hyperconnected civilization.
Hard times, very hard times, for whoever continues to insist on long-term strategies, on the urgency of creating a culture of responsibility and prevention, on re-starting, evidently (let me repeat myself once again), from education, training, and research; hard times, very hard times, for those who reflect on and study the crisis of thought (rather than that of words and language), which has been going on for a very long time, in all shades and declinations.

And so... thought and thinking, “thinking about thought”, researching thought: notwithstanding the attempts at reproducing it, emulating it, simulating it, thought has always been an essential dimension whose vital importance has been deliberately ignored or underestimated, a dimension that the hegemonic paradigm often considers futile, something which, according to the hypertechological civilization with its obsession for automation and simulation, can be simply delegated to technology. Facts, figures and data dominate the scene—all necessary elements, of course, but as I have often underlined, they are presented as though they were inevitable “facts of life”: Yet, as they used to teach us in the days of yore in courses on methodology of research and epistemology, facts and data “can never speak for themselves.” Thus these necessary but insufficient skills and competences, digital competences above all, are (believed to be) the only ones that count, as long as we do not think about the long term consequences. Know-how, concreteness and automation are all aspects of the dominant mindset I have defined as “the tyranny of concreteness” (Dominici P., 1998-2019). There is never enough time—time for thought, for reflection, for living, for vitality, for complexity. Thought is so greatly feared and so little practiced.

As Bertrand Russell once wrote:

“Men fear thought as they fear nothing else on earth—more than ruin, more even than death. Thought is subversive and revolutionary, destructive and terrible; thought is merciless to privilege, established institutions, and comfortable habits; thought is anarchic and lawless, indifferent to authority, careless of the well-tried wisdom of the ages.” (Russell B., 1916)

In this era of hyper-simulation and automation, there seems to be little place or opportunity for thought.

1. Speed vs. Thought

The “new” digital (hyper) velocity, in its complex interaction with the human factor and with social relations, preserves the original ambivalence common to any “factor” of change and to any social and cultural process. The complexity of this interaction, apart from representing an extraordinary opportunity, also evades any kind of algorithm or other artificial intelligence systems. An ambivalence and complexity that expose our limits and inadequacies, which have been socially and culturally “constructed” precisely through the teaching and training from within our educational institutions, are still incapable of taking in the ongoing change and, what is more, of providing a working translation of the widely acclaimed “paradigm shift.” Even more significantly, the “new” digital (hyper) velocity, with its baggage of ambivalence and complexity, aside from underlining our personal,
organizational and social inefficiencies, truly leaves us very little time for reflection, for thinking, and even more, for a critical analysis of what is happening, and more generally for a critical analysis of (hyper) complexity itself, as it continues to reveal the radical inadequacies of our paradigms, of our interpretative models, of our traditional cultures’ as well, and in particular, of our modern instruments of management and control.

“Our systems of cognitive and evaluative orientation show themselves to be inadequate for facing a constantly evolving social reality consisting of complex systems.”

Along general lines, we can affirm that “speed” and acceleration (and a certain idea/vision/culture of speed) limit/complicate/get in the way of “reflection”, of the practice of logic (which, as I have been repeating for years, should be taught from the very first years of school on) and “critical thinking.” At the same time, the obsessive pursuit—at any cost—of simplification (?), which clearly serves a useful purpose and should be pursued as long as it does not force us to lose sight of the whole, the global, the complex—intrinsic to social, economic, organizational and cultural processes—leads to the trivialization of our analyses and of the related solutions proposed.

Consequently, little space/time is left for queries, critical analysis and (incessant) research, and this is true not only in public discourse and in the dominant narratives, but all through society. Although, at least apparently, many voices today are calling for something which, through scientific pathways, and more generally, in the development of knowledge and innovation, is almost taken for granted: the importance of asking (ourselves) “questions”, and of questioning the dominant paradigms and consolidated models, of seeking out the weak points and anomalies in those kinds of knowledge, and also among those stereotypes and prejudices, it is precisely the latter that not only condition us on many levels but in the meantime reassure us because they make it easier for us to decipher, de-code and assign meaning to life and to our surrounding reality.

Hence we continue to look exclusively for simple solutions and answers to complex problems (this is what interests everyone: they know, learn and want to know only “how to?”), solutions that must be found in less and less time, carried out with a request for such rapidity of execution that it forces us to depend totally—giving them complete carte blanche, with unconditional trust—on technique, machines, robots, expert systems, artificial intelligence and the new technologies, under the delusion of being able to eliminate errors and unpredictability, with profound repercussions in terms of management, surveillance and responsibility. Once again, in this situation, thinking and, most of all, reflection are incompatible with velocity—with an excessive velocity which, I repeat, reveals all of our weaknesses and insecurities, even among organizations and nation-states.

* Culture, intended in a general sense, is a historically determined set of practices and beliefs, of models and instruments appertaining to a specific historic-cultural context, which could also be defined a la Weber, as “a finite segment of the meaningless infinity of the world process, a segment on which human beings confer meaning and significance”, meaning and significance, naturally, from the Subject's point of view. (See Weber, 1922, p.96)
Facing these crucial issues with this approach, in any case, does not mean questioning the importance and value of technique and technological innovations. However, it does pose dilemmas that we must have the courage to face because the implications for our future are significant.

As I wrote some time ago on the subject of security and liberty, never before has the image of the Global Village—prophesied by McLuhan (1964)—come back so clearly to haunt us, which—albeit in a context dominated by rationality and by the logics of control and surveillance—seems to feature an entropy that disequilibrates the balance of the so-called ‘infosphere’ (Toffler, 1980; Floridi, 2010). A ‘global village,’ increasingly interdependent—this is by no means the first time I have made this point—that resembles more and more closely a hyper-technological and hyperconnected—but above all—a hyper-surveilled mass society (Byung-Chul, 2012, 2013; Dominici, 2008-2017).

Considering the complexity of such a metamorphosis and the new situations that it implicates, whose solution cannot be met simply through acquired experience, an in-depth analysis of the possible ramifications correlated to the coming of the technological network civilization is sorely needed. As discussed elsewhere, we are talking about an anthropological transformation (Dominici, 1996 and further works), evidently capable of changing our way of understanding reality and the world system, yet whose possible consequences are no less dangerous all the same.

Caught up in the midst of a paradigm shift and this anthropological transformation, we are witnessing/living through an overturn of the complex interaction between biological and cultural evolution (1996 and further works), a profoundly relevant question and one that, in terms of the “communication culture” (ibidem), has become even more complex and problematical, owing to the lack of a thought system and a theoretical-interpretative model capable of observing, recognizing and endeavoring to understand hypercomplexity and the (in some ways overbearing) bursting forth of chaos (Dominici, 1995-1996 and further works).

And so it comes about that this new social complexity is defining the structural conditions heralding a kind of reflective knowledge, which will have to cope with the crises of thought and cognitive paradigms and with a general incapacity for proffering acceptable solutions. Our systems of cognitive and evaluative orientation show themselves to be inadequate for facing a constantly evolving social reality consisting of complex systems—that are themselves marked by an extreme sensitivity to perturbation—which are able to self-organize and evolve in a manner that is in no way linear or predictable.

Yet our very lives are emergent, infinite sequences of dynamic processes in which chaos (Lorenz, 1963; Gleick, 1987; Stewart, 1989; Kiel, 1994; Prigogine-Stengers, 1997) and emergence reveal themselves in every possible and impossible, every inconceivable, unforeseeable manner. Social/human life is characterized by infinite sequences of “black swans” (Dominici 1995-1996, 2003-2019 and further works), to use an ancient metaphor that was already very popular among past civilizations. Error, unpredictability, hypercomplexity and systemic dynamism are its constituent elements (ibidem).

Speaking of which, I have a strong inkling that, so often, on all planes of action in social and organizational praxis, when faced with situations or dynamics that have escaped their
control/illusion of control, what those who insist on the “black swan” concept/metaphor, (and here I am not referring, obviously, to Taleb and his famous work The Black Swan (Taleb, 2004, 2007, 2012), what those who insist on the sudden appearance of an unimaginable and unforeseeable event, or in any case, of one that is highly improbable, are doing/trying to do, is to utilize/construct the classic “ex-post rationalization” in order to reassure themselves and those around them that, notwithstanding a few isolated episodes, everything is still “under control” and predictable. Part and parcel of the “grand illusions” of the hypertechnological civilization.

It is thus becoming more and more urgent, after so much delay, to realize the importance of a thinking style and a politics that can no longer afford to have a close-minded and particularistic outlook, especially in an era where signs of insecurity, uncertainty and vulnerability of every kind are on display, an era where dramatic conflicts are taking place that fuel the illusion, not only among the political classes and leaders of the nation states, of the prospect of finding simple and immediate solutions to complex problems, but also—and above all—that reinforce the rationales of exclusion and of perpetual emergency. All of this without considering, on the other hand, the new asymmetries and inequalities that are paradoxically becoming more and more blatant.

It is the people—this must be clear—and the community who always bear the consequences. Even more so in these moments of extraordinary, continual and systemic emergency. Although the reasoning and logic used during emergency situations are comprehensible, known factors, what comes rushing in, stronger and more invasive than ever before, are the discourses and narratives linked to our faith in a civilization based on illusory rationality and that we will eventually succeed in eliminating all error from society by predicting, measuring and controlling every aspect of our lives.

According to which, only the “facts” count, only the data are useful (and presented as “facts of life”), even when the empirical evidence and variables are missing, and for these same reasons, even when no one is capable of predicting with any certainty whatsoever the absolutely non-linear evolution of this pandemic (series of pandemics), this concept persists and insists that what is needed are solely technical skills and hyper-specialized technicians: solely “know-how”, solely and exclusively competences, in what has become an ideological conceptualization of competence.

One of the many possible examples of this mentality is that in order to achieve “innovation” (with all the ideological sauces this word is served in), all that is required are data, technologies, and above all technologists, or in certain cases, some necessary legal or normative adjustments involving legal experts. But what kind of social or cultural innovation could ever be activated through these methods?

These themes have been discussed and written about for decades, endless research and studies have been produced, and yet where do we find ourselves today? Every time we come face to face with data and research that underlines our structural backwardness—from every perspective, throughout the decades, all (almost all) those who have the responsibility and the power to make decisions, have chosen to fall back onto this deceptive and misleading
mindset, which, besides other consequences, continues to propagate a top-down model of technological innovation, without any kind of cultural backing—a mindset which will never allow complex organizations and ecosystems to metabolize the technological transformation, which, as I have said so often before, produces/triggers/determines (even beyond a causal nexus) a transformation which is first and foremost anthropological. A far cry from a grassroots construct (another concept that is constantly cited), a far cry from social innovation, a far cry from digital citizenship and participative democracy, a far cry from long-term policies, where we have been heading for many years, is in the completely opposite direction.

2. The hegemony of the “economistic” paradigm and the urgency of “caring”

Social distancing and quarantine during the COVID-19 pandemic, perhaps I should say self-isolation, apart from leading us to reflect on many fundamental issues related to our public and private lives, apart from leading us to reflect on the strategic centrality of knowledge, knowledge sharing and “shared knowledge”, and even more, on the privation of dimensions/aspects/factors that we have tended to take for granted (first and foremost, our “freedom”, a complex concept of many shades and facets, as well as the essential value of “relationships”), have led us to reflect deeply on how this pandemic, in its global dimension as a social phenomenon, has changed our lifestyles (but not, I believe, our value systems) and our expectations. A society that has been built on individualistic and utilitarian principles, on competition without rules or regulations, marked by such deeply rooted particularisms and privileges in all social layers, a society structured for elites and corporations (a feudal social model)—an “asymmetric society”, as I have defined it—cannot transform itself radically, not even in the presence of this pandemic. There have been various precedents: disasters, catastrophes, and emergencies of every kind; so often we refer (mistakenly, in my opinion) to “social capital”, crises of trust and cooperation, complex social mechanisms that involve numerous triggers and concauses.

The hegemony of exploitative rationality and of the (self-regulating) market economy has ended up imposing a dominion-based line of reasoning that has spread through every aspect of social life. This process has weakened the bonds that transform individual choice(s) into collective projects and actions. What has been generated, therefore, within social cohabitation, is a strongly individualized global society, which places an enormous burden of responsibility on the shoulders of all single actors, who are called upon to manage their “individual freedom” responsibly, with no community to support them. In this light, the development of forms of mediated communication (Thompson, 1995), apart from the advantages in terms of online working and knowledge sharing, could end up causing the mechanisms that are the protagonists of “social capital” to cool off to an even greater extent.

“Care”, “caring for”, or “taking care of” what we call “society” requires/should require/would have required (and in the future, will require) diverse actions and strategies other than a sequence of renewed awareness. By no means the least important, that of finally beginning to question the hegemony of our economic (and “economistic”) paradigm (otherwise, there is no use talking about “the paradigm shift” or rethinking our developmental models, and
we might as well give up on the idea of sustainable societies and economies). As I have been underlining for some time now—but it must be clear, this is not a criticism per se of economics or economists—in analyzing the ongoing complex social transformation and the new asymmetries and inequalities, which are educational, cognitive and cultural, as well as many other issues, we must acquire consciousness that economics is not a “hard science”, but rather a “social science” (1998-2003), with all that this implicates. At the same time, so long as society continues to be considered/conceived/managed as a subsystem of the economy, we will not make much progress.

“We continue to make the fatal error of thinking of society and of organizations as though they were machines (another mechanistic metaphor) rather than organisms.”


The exponential growth of financial power has had extremely negative consequences for the world economy and above all for the lives of people; what this process of forming a virtual space, where money and information can flow at an extremely high speed, has done is to empty politics and the power systems of the control of their own “bodies”, separating them even further from civil society and from the single social actors. And the belief that technology (in particular, the web), can solve any problem, including the capacity to bring politics and citizens back together, could turn out to be yet another fatal error.

On the contrary, social and political praxis, even while finding new virtual areas for the construction and organization of consent and/or opinion(s), requires a crucial passage from theoretical design to solid practical action, which must influence those making political
decisions. This calls for informed and critically educated social actors in flesh and blood, active and aware recipients within their networks of social cooperation.

Because meeting people, even just crossing paths, looking into their eyes, speaking to them, interacting, even with those we do not know well, and listening to the sounds and noises of public gathering places, is truly something that cannot be substituted. Never have we been so hyperconnected and interconnected, and yet, at the same time, we have never felt the absence of the Other, of others, as in this phase of “mediated closeness”. The absence of a complex relationship can in no way be simulated.

We are ourselves “complex systems”, so our need for others and for a relationship with them is a desperate need. This is because, as complex and open systems, we are ourselves in relationships. We need others and their nearness in the same way that plants need sunlight. Because sooner or later (no one can establish exactly “when”), we will go back to the social, to the vital, to the fascinating as well as unpredictable beauty and complexity of relating without mediation and without the filters/limits imposed by the use of connection technologies. As I said many years ago, no matter how extraordinary they may be, and despite the fact that we have not yet fully understood their potential and their ethical and epistemological implications, connection technologies provide merely a “simulation of communication” and of social relations, at times even emptying them of certain fundamental dimensions. From the same analytical perspective, the awareness that is still missing is, once again, the complexity of thought and of social and organizational cultures. We continue to make the fatal error of thinking of society and of organizations as though they were machines (another mechanistic metaphor) rather than organisms. (Capra, 1975, 1996; Barabasi, 2002; Israel, 2004, 2005).

We thus find ourselves at a standstill, stuck in what is simply a pose, merely resembling (or even worse, simulating) movement and dynamics; stuck within a series of illusory certainties, convinced that everything is under control and governable. Sooner or later, however, we will come to realize, no matter in what area/level of social and organizational praxis, that we have been fooling ourselves all along, and at that point, all we will have left is fear, indifference and withdrawal from everything and everyone. Faced with an even more evident and recognizable hypercomplexity that denotes the ongoing change, for which our educational institutions are dramatically unprepared; faced with the exponential growth of interdependencies/interconnections/interactions/conditioning factors that form the neural network of phenomena and processes, we have been witnessing for some time—almost paradoxically—the dominion/hegemony of reductionist and deterministic analyses and explanations and the return of a neo-positivist vision or conception of reality and of what is real.

3. The Grand Illusions of the Hypertechnological Civilization

Dynamics and processes which take form, on the one hand, with an—at times compulsive—search for simplification at any cost, even when it is partially dangerous to simplify (for instance, in education, training, communication, democracy) and, on the other hand, in what I mentioned before as the “grand illusions of the hypertechnological civilization”: rationality, control, predictability, measurability, elimination of error (Dominici, 1995-1996, 2003 and
further works). Along with these errors I have often pointed out the “Great Mistake” we are making (1996): to keep thinking of education, training and educational processes as a question of a purely technical nature, solely a problem of “skills” and “know-how” and nothing more, which must be dealt with by staking everything on speed and simulation, and last but not least, the obsession with concreteness, which has become a veritable dictatorship. Added to this is the quick fix to the everlasting situation of emergency, which is currently unrolling (for how long?) through—what else?—a digital panacea to accompany the therapeutic scenarios and practices.

Every time I hear—or read—the fawning narratives and the praise lavished on a “direct” (and as simplified as possible) “digital democracy” on “digital citizenship” (but what kind of digital citizenship are we talking about if we cannot even guarantee the minimum requirements of plain citizenship?), on “digital education” (on whose approach I—and often I alone—have always been harshly critical), which continue to be proclaimed intact, unchanged, from every kind of sector, not only from the perspectives of media and social media, as well as terms such as “digital republic” and “digital inclusion” (!)—I have even heard the expression “digital empathy”. I realize once again how willing we are to let ourselves be seduced and guided by formulas and concepts that are completely foreign to our nature. Terms like digital education, innovation, complexity and so forth are flung about: words, words, nothing but words (words which should at least be given a working definition/translation, rather than behaving as though mere word power, or a “change in words” could suffice to change the things themselves). Words, slogans or quick-fix formulas, communication-come-marketing will never suffice. What is truly needed are actions and praxis set towards an objective of true innovation, equality, education and democracy. And yet, according to the various new ministries of technological innovation and digitalization, all we need for an ideal solution is to hire innovators and coding experts for our school system in defense of our “right to innovate”.

“No kind of digital citizenship is possible without guaranteeing the pre-requisites and the conditions of citizenship, without (at least) attempting to guarantee equality of starting conditions, whose absence renders all discourses about meritocracy purely rhetorical” (Dominici, 1995-1996 and further works).

Social media giants, government authorities, telecommunication companies, and global media platforms have come up with dozens of digital projects for remote schooling, for the enhancement of culture and education through the internet, online programs designed to “help the population comprehend all the potential of the internet, and to bring “digital culture into the home”, through which, apparently, cultural asymmetries will melt away like virtual snow through techno-unification,” despite the fact that, as all the “digital” actions/initiatives (and in general, every kind of technological innovation) carried out in these years have demonstrated: proceeding in this manner, along these trajectories, no kind of “culture”—much less, I repeat, “digital culture”—can be created. At very best, if these “actions” are performed correctly,
what this will amount to is a top-down imposition of a model of technical (but not social or cultural) innovation, whose outcome will notoriously be extraordinary opportunities for small groups and elites.

Years have gone by, more than two decades have gone by, and we are still in the same position, as though nothing had happened during this period, as though the fundamental questions related to education and training, and in particular to “educational poverty” and “functional illiteracy,” had completely passed us by. Governments come and go, as do political parties and their leaders; what does not change, however, are the experts, elites, networks and authoritative voices. What does not change are the technical fields of knowledge and skills called upon to provide guidelines and possible solutions, which, as I have said before, so often come down to simple solutions to complex problems, tied to the short-term rationales of politics. The slogans and narratives are still standing tall, strong, unfazed and unchanged, and not only from the perspective of the media and social networks.

Nevertheless, I have continued to write, study and do research with a critical approach, an “other” approach, for over twenty years, and yet, my focus, I am proud to say, is on education, not on “digital education:” And it is education that is “the” problem, not digital education; it is a question of method and approach. Consequently, I will repeat it once again: we must radically rethink education (Dominici, 1996-2019), along with research and training. There are many crucial reasons, among which is the need to learn how to inhabit the hyperconnected, technological environments that are otherwise destined to remain an opportunity for the few. Learning how to live with, and as I have said, to “inhabit” the digital (1995-1996), because “the digital” changes our way of perceiving and knowing reality and what is real (ibidem). In other words, I am referring to the well-known “ethical and epistemological implications” evoked today, it seems, by everyone, yet without giving coherence and continuity to their declarations.

On the contrary, the general approach and strategies are the same as ever, in confirmation of the fact that, while everyone is talking/writing about “paradigm shift”, anthropological transformation” (ibidem), “ethical and epistemological implications”, “digital cultures”, about “rethinking education and training, and last but not least, “complexity”, it is painfully obvious that these are just buzz-words, used as labels and slogans to demonstrate one’s originality. They are winning formulas, taken up, in many cases, precisely by those who formerly were the ones shutting out certain approaches and perspectives on study and research (critical thinking, systems thinking, multidisciplinarity, interdisciplinarity, transdisciplinarity), in those very same educational institutions, those who followed other perspectives, often reductionist and deterministic, fueled by the press and media, and for many reasons, at times without having ever truly researched or studied these issues.

Yet technological innovation has always been a strategic factor of change in social systems and organizations, but if not supported by a culture of communication, by a systemic vision of complexity, and concerning political decisions, by social policies capable of setting off and supporting cultural change, it will always turn out to be a would-be innovation (Dominici, 1996-2019). The knowledge society and the new global ecosystem are destined to become more and more exclusive and closed-off, even where it is no longer possible to put up walls
and barriers to manage diversity, inequality and conflict. “Asymmetric society”, apparently open and inclusive, in reality guarantees only theoretical opportunities for inclusion and mobility, or within a purely legal framework.

Innovation is a crucial theme for coping with the challenges of the hypercomplex society and the digital revolution, but innovation must be inclusive, constructed from the bottom up through negotiation, and can only be realized based on education and training. When innovation is imposed top-down through exclusively legal pathways, the risks we run are those of “illusory citizenship” and “technological innovation bereft of culture” (ibidem).

4. Education is Innovation, Education is Inclusion, Education is Democracy

I have long been opining that an unequal school, a school that lacks “quality”, has always been the prerequisite and the best guarantee for defining, fueling and reproducing an unequal and asymmetric society. One has the impression at times that we are drifting, slowly but inexorably, towards a society of ignorance (Dominici, 2008, 2010), the No-Knowledge Society*, hinged on a feudal model in which social mobility can only be horizontal. These questions reinforce the well-known correlation between education and innovation, between education and inclusion, and between education and democracy (Dewey, 1916, 1929, 1933; Dominici, 2005-2021; Robinson, 2015). With all the risks and opportunities that accompany the hypertechnological civilization, in particular the “carte blanche” bestowed on technology, regarding issues that are absolutely vital for social systems and organizations, involving control, rationality, protection, security, trust and social bonds. In developing these points, we cannot shirk from taking into account a series of factors and criticalities that intersect on differing planes of analysis and intervention that can no longer be neglected:

- the lack of a thought system and of a systemic view, and contemporarily, the underestimation of the importance of research on thinking and education;
- the lack of long-term policies related to education, training and research;
- the meagerness and inadequacy of investments in education, training and research;
- the lack of awareness and acknowledgement that education, training and research are the only genuine infrastructures capable of bringing change and innovation to many rather than to a few;
- the fact that school and university continue to be conceived, imagined and designed as two separate bodies;
- the lack of policies for orientation, completely neglected in favor of marketing strategies;
- the deceptive triumph of the guiding principle that knowledge and fields of knowledge must be first and foremost useful;

* No-Knowledge Society—a term I have coined as a more realistic version of what is commonly—and erroneously—called the “Knowledge Society”. The No-Knowledge Society is a type of society, characterized by the devaluation and the deterioration of its educational and training processes, in which the exponential growth of available information and (shared) knowledge corresponds to an equally exponential growth of ignorance, conformism and hetero-direction.
• the error of continuing to chase after business and markets in an *era of rapid obsolescence* of all forms of knowledge, skills, trades and professional profiles;
• the dominion and hegemony of a *culture of standardization*, completely pervading the cultures of evaluation and communication (Hammersley, 2013; Dominici, 2003-2021).

In these suspended and surreal times, deluded by what I call a “simulation of closeness”, we (perhaps) have more time for reflection and thinking. A question we must ask ourselves, especially in this moment, is the following: is it possible to be *vassals* in a democracy?

Unfortunately, there is still very little awareness of how subtle the borders between citizenship and subjection are, a very thin line that has become even thinner in the hypertechnological and hyperconnected civilization where illusions are spun and spread, and not only through narratives and storytelling. The illusion that is becoming more and more widespread, without even considering other variables and concauses, is that it is precisely digital connection technologies that will be able to create the conditions for “true” democracy and at last for active and non-hetero-directed participation. Dangerously dystopian ideas, linked to a reductionist and deterministic analysis of reality, because, as I have said so often in the past, what can be simplified are the instruments, procedures, language (partially), data and their visualization, but “democracy is complexity” (Dominici, 1995-1996) and, just like life forms and life itself, cannot be simplified.

For the time being, at least, and not by chance, we are stuck in the illusion of a less asymmetrical relation to power and in a purely “simulated” participation, a participation fueled by rhetorical narratives on simplification and disintermediation. Caught between utopias and dystopias that appear to be, finally, within our reach. In the form of simple solutions to complex problems. I repeat, democracy is complexity; it is relational, social, and human complexity (*ibidem*). Order and chaos, balance and conflict, control and unpredictability, normality and deviance, pluralism and conformity co-exist and co-habit within this *hypercomplexity*, along trajectories that merely appear to be predictable and controllable.

In the past few decades, we have been, so to speak, hurled into hypercomplexity, without knowing how to recognize complexity itself, how to perceive objects as systems rather than vice versa, without fully understanding the *significance* of *living* complex systems (Poincaré, 1885, 1908; Le Moigne, 1977; Mandelbrot, 1977; Maturana-Varela, 1980, 1985; Panikkar, 1989; Luhmann, 1984, 1990; Kiel, 1994; Gell-Mann, 1994, 1995; Krugman, 1996; Prigogine-Stengers, 1984, 1997; Israel, 2005; Dominici, 2003-2021; Morin, 1973-2015). The “*thinking crisis*” and the absence of a thought system have acquired even more urgency, precisely because we are becoming more and more conscious of the complex, interdependent and interconnected nature of reality as a system of empirical phenomena now that the inadequacies of linear and causal thinking can no longer be ignored. Emergency or no emergency, nation state or no nation state, global governance or no global governance, if we want to preserve a democratic way of life and construct a world for *the people*, we will have to teach ourselves and our younger generations how to *inhabit complexity* (1995)
without creating a “Panopticon” in the desperate—and futile—attempt to control, predict and subjugate ourselves and our own reality by becoming aware of the complexity of the vital and of the vitality of complexity.

5. The complexity of the vital and the vitality of complexity.

Structurally characterized by emergent properties—which are not, at least initially, “observable” because the observer is the participant and as such, will affect and be affected by what he is observing, by radical interdependency and interconnection among its parts (which are always “relations”), capable of self-organization and self-generation, irrespressibly dynamic, irreversible, unpredictable, heterogenic and dissipative in its non-linear evolution, capable of holding tensions, processes, phenomena, conflict, chaos, ambivalence, contradiction, paradox, apparently irreconcilable dimensions, together, permitting the coexistence of order and chaos, balance and instability. Open dialectics and existential oxymora, borders and limits that blur into hybrid zones and undefined, indefinable trajectories. Literally impossible to manage or to control (not just as a question of terms or buzz words) all of this is (hyper) complexity, the essential component of all organic aggregates, in other words, of all living organisms and biological, social, relational, human systems: complex adaptive systems, as said above, capable of self-generation and self-organization (emergence), made up of parts in whose multiple levels of systemic connections and interactions condition the non-linear behavior and the evolution of the systems themselves and of their ecosystems.

The paradigm of the hypertechnological and hyperconnected civilization, founded on the premise of the progressive marginalization of the human, of the human factor, which has always implicated and encompassed the essential dimensions of error, unpredictability, and above all, responsibility, seems to have succeeded in duping us into believing in its grandiose but risky illusions, as I have mentioned before, illusions of rationality, control, predictability, measurability and even the elimination of error from our lives. Between techno-solutions and “datacracy”, a “new” return to reductionism and determinism, having already, alas, bestowed carte blanche on technologies and on the enormous interests behind them, we have counter-reformed our educational institutions in the misleading and deceptive endeavor to succeed in simulating, measuring, predicting, and pre-determining everything: thought, behavior, interactions, forms of sociality and life itself. Mistaking, at times, education for indoctrination, education for regimentation, and continuing to teach and train “mere executors of functions and rules” (Dominici, 1995-1996 and further works), we have continued to separate something whose nature is deeply unified and interdependent, incapable of perceiving the togetherness, the bonds, the connections, the beauty, the unexpected, the unforeseeable, the unknown, and above all, the systemic and chaotic nature of their arising.

With the advent of Artificial Intelligence and its potential developments, it would seem that the last traditional and scientifically consolidated borders between “complicated” and “complex” systems are about to be done away with. However, the dynamics I believe may unfold, neither linear nor calculable, could well be a progressive evolution and transformation (through non-linear differentiation) of “complicated systems” into “complex systems” with a surprising, and in a certain sense, paradoxical return to the centrality of the human/natural element; hence, paradoxically, with a renewed centrality of error and unpredictability. The
human returns to the fore and to the core, with new, unprecedented powers and responsibilities never before conceived of in the history of humanity. We run the risk of being unable to evaluate in depth the consequences of our choices, which is perhaps irreversible.

It is Mother Nature, of course, who will have the last word; it is the complexity of complex systems, other than the irreducible vitality of the spirit and of life itself, which no technological device or system of artificial intelligence will ever be able to fully capture, manage and/or control.

Thought itself is an emergent property of that infinitely complex system known as the human brain. The current crisis of thought and thinking is so profound, systemic and, at this point in time, so deeply consolidated that where we are slowly headed (or rather not so slowly), if we continue to underestimate or play down its dimensions and implications, both on individual and social terms, is towards a society that, despite being completely global, systemic and hyperconnected, increasingly glorifies ignorance and non-knowledge and is destined to deprive itself of any opportunities for innovation, change, emancipation or democratization.

Author’s Contact Information
Email: piero.dominici@unipg.it

Bibliography
Hard Times: The Thinking Crisis in the No-Knowledge Society

Piero Dominici

33. Dominici P., Oltre la libertà ...di “essere sudditi”, in F. Varanini (a cura di), Corpi, menti, macchine per pensare, Casa della Cultura, Anno 2, numero 4, Milano 2017.
40. Dominici P., Dentro la Società Interconnessa. La cultura della complessità per abitare i confini e le tensioni della civiltà iper Tecnologica, Milano: FrancoAngeli 2019d.
Hard Times: The Thinking Crisis in the No-Knowledge Society

Piero Dominici


Future as Emergence: Paradigms, Patterns and Processes

Sesh Velamoor
Director of Programs, Foundation for the Future; Fellow, World Academy of Art & Science

Abstract

Paradigms for creating Utopias based on “Human Agency” as the sole driving force, far from actually obtaining them, are the direct cause of the Mega Crises that threaten the very survival of humans as a species. This essay seeks to show that the survival of our species requires an orientation that Humans as “Active Walkers” are but one input to a complex interactive process in multiple dimensions that causes the future to emerge.

There is general agreement among scholars that Humans are now in what is defined as the Anthropocene, best described in The Encyclopedia of Earth¹ as follows, “The Anthropocene defines Earth’s most recent geologic time period as being human-influenced, or anthropogenic, based on overwhelming global evidence that atmospheric, geologic, hydrologic, and other earth system processes are now altered by humans. The word combines the root “anthropo”, meaning “human” with the root “-cene”, the standard suffix for “epoch” in geologic time, starting at the end of the last Ice Age.

The Anthropocene is a starting point in terms of a major revolution, in terms of humans moving away from being Hunter-Gatherers to Farming and Agriculture and for all intents and purposes the onset of evolution of what can be described as “Civilization” and “Societies” inclusive of varieties of Politics, Economics, Religion, and Culture based on philosophies, concepts, and ideas, or Operant Paradigms. These operant paradigms can be traced to human attempts to understand, define and act on three major relationships viz. Humans and Divinity, Humans and Nature, and Humans vis-à-vis Humans.

Civilizations, Eastern and Western, have in a broad sense operated on two such paradigms or philosophies, describing the nature of the three relationships named above. The first one, namely the polytheistic paradigm, is distinguished as a new period either after or within the Holocene, the current epoch, which began approximately 10,000 years ago.

Eastern Civilization, which predates the Monotheistic Western Paradigm by Millennia, is based on the ideas that Humans and the Divine are inseparable, Humans are part and parcel of Nature, inextricably connected and interdependent, and all life including human life is one and the same. This philosophy is best articulated and synonymous with what is termed as the “Sanatana Dharma”² in Hindu philosophy, as opposed to the ideas of Western Civilization, that postulates that Humans and the divine are wholly separate, God has given Humans dominion over Nature to understand and use for human progress and Human life is sanctity personified over and above all other life.
Both of these paradigms are operating to this day, even though the Eastern paradigm is steadily receding into the background, even as recent realizations seem to be forcing humans to reconsider returning to it, notwithstanding the fact that the Western Paradigm has now emerged as the dominant one over the last two millennia. A major difference between these two paradigms is that the Eastern Paradigm pursued knowledge for knowledge’s sake, and in the process obtained profound understandings of the external world but was primarily preoccupied with knowing the inner human self, based on inner-directed explorations to obtain release from the human condition, as in Moksha, Nirvana etc.

“The paradigms and models we have used thus far have failed to be predictable because our models for managing our futures and the structure of the model of the real world in use have been completely unrealistic and do not come close to reflecting the structure of the real world.”

The western paradigm moved forward within the framework of what is best described as the “Baconian Method”, directed at the external world (including using the ones discovered by the East), thus obtaining discoveries and inventions to apply and use for human progress. Progress is deemed to be limitless based on understanding and exploiting nature for meeting human material needs.

An important distinction needs to be made with respect to the inherent nature of the two paradigms. The distinction is with respect to the scope and extent of human “agency” in obtaining desired outcomes and futures. Implied in the Western Paradigm is the assumption that human agency, as ordained by the divine, is the sole determinant of desired outcomes and futures. The Eastern Paradigm on the other hand, while not eliminating human agency, is much more fatalistic and demands human agency be used within the framework of broader ideas and values described above.

Given this background it will now be appropriate to assess the state of the Planet and the general condition of humans on it and more important to examine whether the idea of Human Agency as the sole determinant of desired outcomes and futures is valid and sustainable.

The dominant paradigm operating for the last two millennia, based on human agency as the sole determinant of desired outcomes, has developed and implemented a plethora of ideas to create “utopia”. While it is important to acknowledge that the accomplishments are fantastic by way of improving the material condition of humans, uneven as it is, it would be fair to expect that Utopia would have manifested long ago. Needless to say, however, anyone looking dispassionately at the human condition and the state of the planet today, one would have to conclude that “Utopia” is nowhere near to being achieved, and actually, in many respects, we are confronted with the stark reality of “dystopia” and unintended consequences. Human populations have burgeoned from 100s of millions to billions, poverty, disease
(pandemics), war, destruction of the natural world, extinctions of species, climate change, impending exhaustion of natural resources, etc. are there for all to see.

At this critical juncture, it is imperative therefore that we take a second look at how the future comes about. In order to get to such an understanding, it is necessary to first attempt to describe a model, a construct, that will best illustrate the process in action that causes the future to come about. It is important to first acknowledge that the paradigms and models we have used thus far have failed to be predictable because our models for managing our futures and the structure of the model of the real world in use have been completely unrealistic and do not come close to reflecting the structure of the real world. As noted by James Gleick in his book *Chaos*, \(^3\) “The degree to which the model (our current model!) reflects reality depends entirely on how the logical structure of the model and the logical structure of the real-world observable match”.

The following is an attempt to outline the framework of a model that more closely approximates the logical structure of the real world. The model can be described as follows:

It is a three-dimensional matrix. The first axis is humans as participants, individually and collectively, concurrently functioning as agents at eight different levels of identity, continuously attempting to optimize their multiple interests, viz., individual, family, neighborhood, city, state, region, nation, and the planet. The second axis is the world around them in the natural realm, viz. the Hydrosphere, the Biosphere, the Lithosphere, the Atmosphere, Space and Beyond all in a constant state of flux, naturally and otherwise. The third axis is the varieties of systems that humans have initiated and have then evolved into the current forms viz. Social, Economic, Political, Religious, Cultural et al., similarly in a state of constant flux. This complex three-dimensional matrix, mathematically speaking, equates to a mind-bogglingly huge number of dynamic interactions taking place sequentially and simultaneously every second, every minute, every hour, every day and so on. Humans act as agents between themselves, interacting with elements of the second and third dimensions. Similarly, interactions within and between the elements of the second and third dimensions. All resulting in outcomes and consequences that one can reasonably argue would be beyond any currently known means of managing toward a desired outcome and destroy the smug and misplaced notion of humans managing and obtaining desired outcomes and futures. The evidence to support this conclusion abounds all around us.

Scholars around the world are suggesting that humans are at a critical juncture as to their future, and that survival of the species is at risk if course corrections are not taken.

As it relates to course corrections, recent scholarship has given rise to ideas and concepts that enable a better understanding of how the future comes about, human agency notwithstanding. A complete and comprehensive presentation of them is beyond the scope of this book but a list of them with brief definitions is as follows, along with a comprehensive reading list.

1. **The idea that the “Earth is Being” or “Gaia.”**

   “The Gaia hypothesis, also known as the Gaia Theory, Gaia paradigm, or the Gaia principle, proposes that living organisms interact with their inorganic surroundings on
Earth to form a synergistic and self-regulating complex system that helps to maintain and perpetuate the conditions for life on the planet.” (Lovelock, 2005)

2. The seven principles underlying all life as outlined by Guy Murchie in 1981 are as follows:
   a. The principle of abstraction: There is something intangible behind life in physical bodies—indeed behind all matter—and the immateriality (energy, if you will) is revealed by the flow of time, which literally makes things into events. All forms of this mysterious noumenon are abstractions.
   b. The principle of interrelatedness, which geneticists tell us, is a measurable fact among all members of a species (including humanity in all its races) and on deeper investigation, it turns out to apply as well to whole kingdoms of creatures, not to mention interrelations between kingdom and kingdom or between world and world without end (by Christian De Duve).
   c. The principle of Omniscience of life, which denies that an impervious boundary has ever been found between any of the kingdoms, or for that matter between life and non-life, leads to the inescapable conclusion that all rocks, seas and worlds, and consequently the entire universe, must in sense be alive.
   d. The polarity principle, which recognizes the balance and mutuality of the opposites that we see everywhere, things like light and darkness, good and evil, male and female, predator and prey, matter and energy—all of which, by their contrast, give definition to life and make it work.
   e. The principle of Transcendence, which refers to the development of our perspectives on time and space as we grow older, as well as the progressive absorption of self into a wider awareness as one matures spiritually, all such factors ultimately revealing themselves to be, in effect, tools of learning in the inexorable drift from our ever-present earthly finitude toward some sort of infinitude far beyond.
   f. The germination of worlds: A critical event that seems to happen once to every celestial organism and after billions of her billions of years of slow evolution, is occurring right now on Earth as evidenced by many fundamental changes during which we call modern times—things that, as far as we know, never happened before and can never happen again on our planet.
   g. The Divinity Principle: The greatest mystery of all, the ultimate mystery of divinity or whatever you choose to call the unknowable essence that leading thinkers have long believed somehow exists beyond creation and maintenance of all body, mind and spirit—not to mention behind every other known or unknown wonder of the universe.

3. The Future as Emergence: Based on the description of the complex model given above, it should be easy to see that the Future “emerges” out of the interactions, with human inputs as “active walkers” (as opposed to “passive walkers”) (Lui Lam, 2005). Some processes that are inherent in the emergence are the elements of Complexity, The Butterfly effect, Catastrophes, Tipping Points, Self-Organization, etc. All of these have become relatively
new fields of study and are producing critical insights that should be availed. And they will show that a retroactive look at how things have evolved over the millennia is more closely linked to the above-mentioned processes at work. A brief look at the processes is warranted.

a. Complexity: (Neil Johnson, 2007) Simply defined as the study of the phenomena which emerge from a collection of interacting objects. Neil Johnson defines it as such “Complexity characterizes the behaviour of a system or model whose components interact in multiple ways and follow local rules, meaning there is no reasonable higher instruction to define the various possible interactions. The term is generally used to characterize something with many parts where those parts interact with each other in multiple ways, culminating in a higher order of emergence greater than the sum of its parts.”

b. Catastrophes: (Gleick 1998) The Catastrophes occur when, as we move in a continuous way through the family of parameters, usually by smoothly changing (incrementally—my word) parameters describing the system, a stable fixed point of the family loses its stability. This change of stability forces the system to move abruptly to the region of a new stable fixed point.

c. The Butterfly effect: According to Edward Lorenz, in chaos theory, “The butterfly effect is the sensitive dependence on initial conditions in which a small change in one state of a deterministic non-linear system can result in large differences in a later state.” (Wikipedia)

d. Tipping Points: (Gladwell 2001) “The critical point in a situation, process, or system beyond which a significant and often unstoppable effect or change takes place.”

e. Self-Organization: (Yates 1987) “Self-Organization, also called spontaneous order, is a process where some form of an overall order from local interactions between parts of an initially disordered system. The process can be spontaneous when sufficient energy is available not needing control by an external agent.”

The totality of what has been presented in the foregoing by way of models, concepts and ideas is essential for new approaches to the study and understanding of ourselves and the world around us; thereby, humans as agents, as active walkers, play a role as an enlightened participant in the emergence of the future with thought and respectful consideration given to the idea of the Planet as our only home, a system inclusive of the Biosphere, the Lithosphere, the Oceans, the Atmosphere, and Space and cognizant of the fact, as documented by Evolution, that we are not exempt from extinction, aware of the concepts and processes described above.

So, a desirable future that emerges will essentially be because of human agency employed in an educated, informed, bottom-up process of inputs to the complex system described above. What it requires is a shift in what is described as the Overton Window from the current operant paradigm and the approaches that are circumscribed by it. An approach first laid out by Joseph P. Overton (1960-2003), named after the American Policy Analyst. It is an approach to identifying the ideas that define the spectrum of acceptability of government
policies. Politicians can act only within that acceptable range. Shifting the Overton Window involves proponents of policies outside the window, persuading the public to expand the window. The public here are the human agents.

Author’s Contact Information
Email: seshvelamoor@gmail.com

References
The writer acknowledges with gratitude the following for use as sources and recommendations for further reading:

6. Ibid.
7. Ibid.
8. Ibid.
9. Ibid.
10. Ibid.
11. Ibid.
15. Wikipedia: Used extensively as reference for definitions wherever needed.

Recommendations for further reading
A Scale Development for Volatile-Uncertain-
Complex-Ambiguous (VUCA) World Management

Elif Çepni
Fellow, World Academy of Art & Science;
Karabük University, Vice Rector; UNESCO Chair

Oya Önalan
Karabük University, Karabük, Türkiye

Canan Yıldıran
Karabük University, Karabük, Türkiye

Gökhan Oruç Önalan
Karabük University, Karabük, Türkiye

Abstract
This article is an attempt to develop a questionnaire, which presently is unavailable in the literature, so that the Volatile-Uncertain-Complex-Ambiguous (VUCA) world can be understood and relatively measured by governments, companies, and institutions. The aim is to measure the dynamics of VUCA in the framework of the economic unit (region, country, economic sector) within the framework of a unique methodological approach. Ultimately the aim is not to approach statistical theory with a new methodology, but to present relevant material to the current approaches of statistical theory with a unique survey. By utilizing the survey created in this article, the potential to analyze many divergent scenarios about “the future readiness” becomes applicable, such as: The relationship between education levels, years of experience, the age of the company and VUCA awareness, and VUCA awareness between different sectors (ICT/Industry, Banking/Industry, Industry/Service), VUCA awareness between varying scale companies (small, medium-size and large-size companies), differences in levels of VUCA awareness in the same sector of different countries, differences in levels of VUCA awareness among the institutions whether they are achieving the Sustainable Development Goals or not, etc.

1. Introduction
Current life is a series of networks in an interdependent and interconnected world in which the conditions and environment frequently and rapidly change; however, irrationally in the present climate, the formulation of plans, strategies and polices is still based on fixed goals. This pattern of thinking requires a review of ideas and methods if successful preparation for an unknown and unpredictable future is to be achieved. Many believe they are credible prognosticators and attempt to formulate decisions according to expected future assumptions, and despite social sciences assuming that perfect prediction is not possible, procedures are available for improving the ability to prepare for a favourable outcome in an unknown future.
According to Persis, Venkatesh, Sreedharan, Shi and Sankaranarayanan (2021), organizations are starting to adopt emerging technologies such as the circular economy and the internet of things to manage their businesses in the VUCA world. In the research conducted by Troise, Corvello, Ghobadian and O’Regan (2022: 9), the importance of investing in digital technologies for organizations to be agile and develop in VUCA environments is stated. In addition, it is emphasized that the use of relevant technologies is not sufficient and digital technology capability should be developed and complemented with innovative capabilities. Persis, Venkatesh, Sreedharan, Shi, and Sankaranarayanan (2021: 9) state that the adoption of cloud-based services is important due to the uncertainty of information-sharing mechanisms in organizations.

The behaviors of complex systems are very difficult to gauge and predict by virtue of known elements such as chaotic behavior, self-organizing patterns, fat tail characteristics, and adaptive interactions, making the modelling of them almost impossible. Knowledge accumulation through gaining different perspectives and a wide range of practice is the most advantageous and best source of strength to possess, as economic theory, policy design and decision making at the individual or corporate level require a more realistic analysis of how real people decide and choose. Present models associated with modern mainstream economics assume that society makes decisions parallel to a mathematical maximizer in possession of renewed new theories that encompass behavioral aspects and complex dynamic external factors into the equation. The capacity for long-term perspective has not been established yet and the ability to deal with change and discontinuity is deficient.

The mechanical view does not lead us easily into exploring interrelationships, co-evolution, dynamic flow, values, unintended consequences, multiple perspectives, learning, the emergence of the totally unexpected, collapse, and the ways differing factors interact or consider the distant future or the role of the past (Boulton, Allen and Bowman, 2015).

Business and other human endeavors are systems which are bound by invisible fabrics of interrelated actions, which often take years to fully play out their effects on each other. It is doubly hard to see the whole pattern of change. Instead, organizations tend to focus on snapshots of isolated parts of the system. Systems thinking is a conceptual framework, a body of knowledge and tools that has been developed over the past fifty years, to make the full patterns clearer, and to help us see how to change reality effectively (Senge, 1994: 10).

In the research conducted by Kaivo-oja and Lauraeus (2018), it is stated that the main issues in modern VUCA management are agility in response to volatility, knowledge and information management in response to uncertainty, restructuring in response to complexity, and experimentation in response to ambiguity.

2. VUCA Literature Review

In an environment that enjoys stability as a normality, the approach of an organization is to rely on previous experiences and customary practices; however, the variability encountered in VUCA conditions drives an organization to become more attentive to associated
stakeholders and increase receptiveness in both education and innovation. The world’s challenges contribute to the unpredictability of today’s environment; therefore, more often than not, outdated information and methods are used, slower responses are consequential and risk avoidance orientation is affected.

Due to the uncertainties experienced and the interconnectedness of the events and problems, it could be almost impossible for them to take ideal measures (Sinha and Sinha, 2020: 19).

With the emerging state of complexity, organizations have readily attempted to identify short term solutions to address opposing problems, which is known as short-termism. The passing of global uniformity has revealed that countries, organizations, companies, and individuals are now huge networks, with each agent of these systems being interconnected and interdependent in a variety of ways.

Whether responses from within the entanglement are sufficient or formulated decisions are adequate to fulfill desired situations is difficult to distinguish due to the big picture being obscured, and the measures taken could worsen situations.

The concept of VUCA was invented by the United States Military Academy and designed to understand the volatile, uncertain, complex, and ambiguous world that was observed after the end of the Cold War, with theories concerning the subject being frequently published in literature since 2002. The concept of VUCA aims to make quick decisions, reach unexpected moves and unpredictable results, as well as strategic leadership (Latha and Christopher, 2020: 743; Kaivo-oja and Lauraeus, 2018: 38; Raghuramapatruni and Kosuri, 2017: 16), which defines the dynamic nature of our day and our world (Horney, 2009: 33). Waller, Lemoine, Mense, Garretson and Richardson (2019: 78) state that VUCA should be seen as a development and more of an opportunity for cooperation rather than a risk that needs to be mitigated. Perhaps an expansion of the present scientific world view which requires certainty, value neutrality and stability, is necessary, or perhaps it is more constructive for organizations to see and enjoy the unpredictability of this world when dealing with complex problems.

It can be stated that communication skills, social intelligence, higher-order thinking skills, self-management, a sense of responsibility, agility and flexibility are important to live in the VUCA world.

2.1. Volatility

There are different definitions of volatility in related literature. In the Merriam-Webster dictionary, it is defined as a tendency of one variable to change quickly and unpredictably (Merriam-Webster Dictionary, 10/12/2023).

The Cambridge dictionary defines volatility as “the quality or state of being likely to change suddenly, especially by becoming worse.” (Cambridge Dictionary, 10/12/2023)

In finance, volatility (usually denoted by) is the degree of variation of a trading price series over time, usually measured by the standard deviation of logarithmic returns. In related
literature, many researchers defined volatility from different perspectives. Some of them are as follows:

According to Sinha and Sinha (2020: 17-18), due to the increasing frequency of changes, it becomes difficult to correlate cause and effect between events in today’s world. One of the best examples of understanding the idea of volatility is price fluctuation. Volatility is concerned with changes in the social environment as well as expressing the pace of change in the world in manufacturing, the services sector, and the market. Beabout (2012: 19) expresses volatility as unexpected in the intensity of the situations.

Lawrence (2013: 5) emphasized that volatility is turbulence, a phenomenon that occurs more frequently than in the past. As stated in Raghuramapatrunci and Kosuri (2017: 18), VUCA quickly became a slogan. It is seen that the balance of many organizations that cannot adapt to the whims of the VUCA world, such as economic turbulence and rapid changes in business environments, has been disrupted.

In the formulation of our daily decisions, we generally use our hearts more than our minds. That is why in line with Rodriguez and Rodriguez (2015: 855) volatility is defined as the goals and values that form the basis of individual decisions. Volatility is referred to as the dynamic quality of decision making.

The measurements of the status of the facts in the information age are changing rapidly, and the definitions of the situation in the mind of the decision-maker are constantly changing due to the constantly updated data (Shaffer, 2011: 66).

Volatility refers to the rate of change in both the variable set and the information space in the values for each variable (Thoren and Vendel, 2019: 301).

Volatility describes the rate of change (usually rapid) and is the model of the dynamics observed in socio-environmental systems. To provide a comprehensive explanation of the causes of volatility, it requires long-term monitoring (Schick, Hobson and Ibisch, 2017: 7).

The research conducted by Bartscht (2015) emphasizes the development of capacities to create useful situational understanding in VUCA environments and the better positioning of organizations in dynamic environments. In the article written by Kaivo-oja and Lauraeus (2018), it is stated that one of the main issues in VUCA management is agility in response to volatility. In the same article it is also stated that the VUCA approach is the basic and the most fundamental conceptual solution for technological disruption as well. In separate important research conducted by Worley and Jules (2020), three inferences about practices related to agile and sustainable organizations in crisis environments have been identified as volatile, uncertain, complex, and ambiguous (VUCA). These are the difficulties in characterizing the situation, the lack of capacity of most organizations to respond, and the silence about socially structural inequality.

2.2. Uncertainty

In the Merriam-Webster dictionary, uncertainty is defined as “the lack of sureness about someone or something”. Moreover, the dictionary says that uncertainty may range from
falling short of certainty to an almost complete lack of conviction or knowledge, especially about an outcome or result (Merriam-Webster Dictionary, 10/12/2023).

In the Collins dictionary, uncertainty is defined as a state of doubt about the future or about what is the right thing to do (Collins Dictionary, 10/12/2023).

In the field of economics, uncertainty is defined as the probability of the occurrence of expected results being unknown, whereas in contrast the probabilities of risk are known. There are many definitions and explanations on this subject in the literature as well. Some of them are shared below.

The concept of uncertainty is defined as the state of lack of information, which is not related to cause and effect but to whether a particular event is important enough to establish a meaningful cause. Uncertainty is not volatility (Bennett and Lemoine, 2014: 314). Uncertainty is characterized by a lack of predictability and the likely prospects for surprise. Uncertainty is the result of the multiple feedback loops and interactions that are inherent in complex systems. Uncertainties also arise due to the rapid interactions of several elements in complex systems. During such “surprises”, the system’s behaviour differs qualitatively from a priori expectations, which can pose risks to conservation objects as well as to the effectiveness of management actions (Schick, 2017: 7).

Today, past experiences are rapidly losing their importance in predicting how events will develop. It becomes difficult to make decisions about issues related to investment, growth, or development. There are many unknown variables, and the prediction of results has gone beyond just statistical tools or technologies (Sinha and Sinha, 2020: 18). Even though there are few predictions for the future, decision-makers often need to predict the possible consequences of their actions (Shaffer, 2011: 66). Since uncertainty is caused by the absence of sufficient information, it simply involves obtaining information. The investment here includes the methods of collecting, interpreting, and sharing information (Bennett and Lemoine, 2014: 314).

Waller et al. (2019) classified uncertainty into six types of scientific evidence depending on generic causation. These are concept uncertainty, measurement uncertainty, calculation uncertainty, sampling uncertainty, mathematical modelling uncertainty and causal uncertainty. Under all these uncertainties, it could be very difficult to talk about perfect modelling.

2.3. Complexity

There are many definitions and explanations on this subject in the literature as well. Some of them are shared below.

According to Beck and Plowman (2019), complex systems are made up of interdependent agents that interact, learn from each other, and adapt their behaviours accordingly. Butler and Allen (2008) emphasized the role of sensitivity to initial conditions, negative and positive feedback processes, disequilibrium and emergent order. Campbell (2007) said that complexity is made up of a very large number of autonomous elements that are dynamic, interactive, and governed by micro-rules that exhibit ‘butterfly effects’, are non-linear, and exhibit replicated patterns. In another study, Rahman-Bacchus and Wu (2011) highlight
spatial self-organization, non-linearities, the plurality of equilibria, and the importance of coevolutionary relationships.

“A new perspective on leadership and decision making based on the complexity of science appears to be the most fundamental requisite of today.”

The main reasons why even the results of controlled environments are beyond expectations are the non-linear relationships, interactions and dependencies between various parameters and variables. Complexity refers to the interdependence of multiple dimensions in a system (Sinha and Sinha, 2020: 18). Complexity refers to the complex and extensive network structure and dynamic paths that exist between the components of a system. It also implies that the state of a system is based on principles of chaos and subject to overflow points (Schick, Hobson and Ibisch, 2017: 8). Complexity can be defined as the number of variables related to a particular decision in the knowledge domain and the amount of interaction between these variables (Thoren and Vendel, 2019: 301).

2.4. Ambiguity

The most abstract element of VUCA is Ambiguity. It is related to the uncertainty of reality, the potential for misreading, the confused meanings of circumstances and the mixed consequences of actions (Schick, 2017: 8). There is a subtle difference between “Uncertainty” and “Ambiguity”. Uncertainty refers to a particular state of existence where relevant information is missing. Ambiguity, on the other hand, is expressed as the absence of a meaningful message caused by the stack of information, despite the availability of relevant information (Sinha and Sinha, 2020: 18). Too much data will naturally lead to a lack of clarity. Therefore, there will be a failure to address the larger root causes underlying the problems (Waller, 2019: 76). Ambiguity is often a by-product of information overload. It should be noted that there is a combination of uncertainty and ambiguity that prevails in our age (Sinha and Sinha, 2020: 18).

Waller (2019: 76) defines ambiguity as the lack of clarity surrounding an event and its meaning, or the reasons behind things that are difficult to understand. Bennett and Lemoine (2014: 27) also state that there is a lack of understanding about causal relationships. Causal relationships are unclear in Ambiguity. Shaffer (2011: 66) mentions that ambiguity refers to the unknown importance of one or more factors in a situation.

3. The Development of the VUCA Questionnaire

A separate literature study was conducted for each of the 4 conditions that make up the VUCA acronym, and 12 question statements were created for each word by the authors of the article, based on more cited studies in this area, by the brainstorming method. The possible questions that can be used to understand the VUCA World awareness of institutions
are formulated as follows. Through this way companies (institutions and governments) will understand to what extent they are prepared for an uncertain future. A Likert scale is a popular and widely used rating scale to measure attitudes, feelings, or opinions that cause variations in behaviour.

Likert scales are most useful when you are measuring unobservable individual characteristics, or characteristics that have no concrete, objective measurement. These can be elements like attitudes, feelings, or opinions that cause variations in behaviour. Some of the most common types of items include:

- **Agreement**: Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree.
- **Quality**: Very Poor, Poor, Fair, Good, Excellent.
- **Likelihood**: Extremely Unlikely, Somewhat Unlikely, Likely, Somewhat Likely, Extremely Likely.
- **Experience**: Very Negative, Somewhat Negative, Neutral, Somewhat Positive, Very Positive (Bhandari and Nikolopoulou, 2024).

The format of the survey that is developed here could be a five-level Likert and could be evaluated as follows; 1. Strongly disagree, 2. Disagree, 3. Neither agree nor disagree, 4. Agree and 5. Strongly agree.

The questionnaire developed includes twelve questions under each word and they are as follows:

**Volatility**

- High volatility causes the failure of strategic plans of institutions.
- Volatility can be measured.
- In our institution, planning is made beforehand anticipating probable future volatile periods.
- In our institution higher volatility is regarded as an opportunity.
- Volatility is among the key components of change management.
- Volatility requires micro level financial analysis for institutions.
- Volatility requires a macro level business cycle analysis for institutions.
- In our institution strategic planning includes projected volatility analysis.
- In our institution volatility is known as a forward looking metric and is measured periodically.
- Volatility provides a profit opportunity.
- Long-term survival requires higher adaptability.
- Since discontinuous changes cannot be foreseen, it requires new management tools and new thinking methods.
Uncertainty

- Radical uncertainty is not well captured by probabilistic reasoning.
- The difference between risk and uncertainty should be made explicit.
- In our institution we prepare contingency plans for unexpected future events before they occur.
- The higher the uncertainty, the more difficult the decision-making is.
- When uncertainty is high, institutions should use new management tools rather than traditional ones.
- Uncertainty requires agility and flexibility.
- Imperfect and incomplete information are the main factors behind higher uncertainty.
- Visionary leadership is required to deal with uncertainty in a better way.
- Participatory and collaborative leadership are necessary skills to deal with uncertainty.
- Detailed Internal Analysis will not have a significant impact on decreasing the degree of uncertainty.
- Multidimensional External Analysis will help institutions decrease the level of uncertainty.
- Inclusion of all stakeholders in the decision-making process may increase the degree of uncertainty.

Complexity

- The future will be increasingly non-linear and complex.
- The emphasis on complexity, networks and patterns of organization is getting more important.
- Our institution is aware of the difference between complex and complicated domains.
- Management of interrelated and interconnected systems requires new ways of leadership.
- Increased complexity leads to competition.
- Networks of interdependencies are taken into consideration while forming the strategic planning of our institution.
- In our institution, rather than a reductionist view, a holistic view is preferred in the decision-making process.
- Complexity is about overcoming the unclear and enormous amount of information.
- Complex domains represent the unknowns.
- In a complex domain, there are no right answers.
- In a complex domain, because the cause-and-effect relationship is unclear, the wisdom of crowds could be a necessity.
- Simplicity in the design of decision making and an organizational table may help to deal with complexity.
Ambiguity

- Business-as-usual models cannot be used under ambiguity.
- To equip staff with 21st century skills may help deal with ambiguity.
- When the “Cause and Effect” relationship cannot be seen clearly, we may use learning by experience.
- A holistic view is the key to deal with ambiguous situations.
- “Critical Thinking” could be helpful to deal with the difficulties of ambiguity.
- Emotional Quotient (EQ) is as important a skill as IQ when dealing with uncertainty.
- The use of Information Communication Systems may effectively help to decrease the degree of ambiguity.
- “Pattern Recognition Skill” of leaders is of vital importance in dealing with ambiguity.
- Providing clear communication to staff, customers or the media clarifies ambiguity.
- “Creative Thinking” could be helpful in dealing with the difficulties of ambiguity.
- Using “Collective Intelligence” and “Encouraging Staff” could be a driving force for motivating managers.
- Dealing with ambiguity requires agility, resilience and anti-fragility depending on experience.

4. Conclusion and Recommendations

The 21st century has been labelled as a post-normal time characterized by the complexity and chaos that exist in the world today. The interdependencies and interconnectedness of countries, companies and individuals are making management and governance exceptionally challenging.

Managers of today require advanced skills, new fashioned ways of thinking and up-to-date values. The VUCA world is a reality of the 21st century and awareness of this fact must be taken into consideration in the management of companies and in the formulation of their strategic plans.

The life span of many companies is shortening as the degree of volatility increases and as uncertainty, complexity, and ambiguity become evident in the world markets. The survey created in this study will allow us to understand or measure the VUCA awareness of different actors in different companies. An inadequate level of awareness should impress upon managers that they should establish an understanding of VUCA to formulate superior and more effective decisions.

A new perspective on leadership and decision-making based on the complexity of science appears to be the most fundamental requisite of today. A new emphasis on complexity, networks, and patterns of organization has emerged. The new conception of life involves a new kind of thinking—thinking in terms of relationships, patterns, and context.
In science, this way of thinking is known as “systemic thinking” or “systems thinking”. A unified systemic vision includes and integrates life’s biological, cognitive, social, and ecological dimensions, in addition to including the philosophical, spiritual, and political implications.

The development of the VUCA questionnaire may help decision makers understand the implications of this unified vision for a broad range of professions, from economics, management, and politics to medicine, psychology, and law. This perspective is essential for overseeing the existing global ecological crisis and protecting the continuation and flourishing of life on earth.

It could be described as a shift of metaphors, a change from seeing the world as a machine to understanding it as a network.

Cybernetics is the result of a multidisciplinary collaboration between mathematicians, neuroscientists, social scientists and engineers, a group that has become known collectively as cyberneticists. To efficiently resolve our problems, an optimum solution is to encourage scientific disciplines to work collaboratively on post-normal formulas. Our endeavour is an attempt to develop one more tool that may help decision makers understand the level of their VUCA awareness and in turn may allow them to understand the complexities of the 21st century.

Although perfect prediction is not possible, especially when we are dealing with ill-defined problems, managers of today can prepare their institutions in an improved manner against the uncharted unknowns of the VUCA world which is one of the most important actualities of today and has evolved from globalization, the extensive use of information and communication technologies, the never-ending emergence of new technologies, the irrationality of agents and lots of cognitive biases.

We hope that the VUCA questionnaire we have tried to develop here will guide today’s managers and academics working in this field who must deal with all these problems.

Authors’ Contact Information
Elif Çepni – Email: dr.cepni@gmail.com
Oya Önalan – Email: oyaonalan@karabuk.edu.tr
Canan Yıldızan – Email: cananyildiran@karabuk.edu.tr
Gökhan Oruç Önal – Email: gokhanoruconalan@karabuk.edu.tr

Bibliography
Report on Recent Reports #6, Winter 2023-2024*

Michael Marien
Senior Principal, The Security & Sustainability Guide;
Research Director, Existential Risks Working Group, World Academy of Art & Science

Abstract
The COP28 meeting in Dubai was a step forward, but the gap between what ought to be done to attain net zero emissions, and what is being done, may very well be widening. The 14 abstracts of authoritative multi-author reports collected here describe likely climate warming in the next decades (notably resulting in 26 potential Earth system tipping points), necessary transformative adaptations to mitigate warming (notably rethinking economics as if ecology mattered), an assessment of 14 potential “dead ends” leading to extinction of humanity, and a broad two-volume overview of existential risk studies.

1. Beyond COP28: Forecasts, Adaptations, and Polycrisis

The final agreement of the 2023 COP28 meeting in Dubai called on parties to transition away from fossil fuels to achieve net zero by 2050. Language calling for a phase-out or phase-down, favored by environmentalists and small island states, was rejected. As The Economist (Dec 16, 49-50) notes, “the final text is a product of bitter compromises between the desire to limit the planet’s warming and the economic interests aligned with fossil fuels.” Many of the deal’s provisions “leave much room for interpretation… (and) like all UN climate deals, there is no enforcement mechanism.” COP28 was a step forward, but the climate challenge appears to be widening the gap between achievements and needs—a perfect example of the “improvement but growing inadequacy paradox” (or IGI paradox).

The 14 foresight abstracts below are in three clusters: authoritative forecasts of what is likely in the next few decades, reports on necessary transformative adaptations, and two broader assessments of polycrisis and existential risk.

1.1. Forecasts

The latest Emissions Gap Report from UNEP (6:1) warns that, despite progress since 2015, we are headed for a temperature rise “far above the Paris Agreement,” as strongly suggested by the WMO’s decades-long assessment of “accelerating climate change” (6:1), which will

* Prior RRR Issues:
Report on Recent Reports #5, Spring 2023
Report on Recent Reports #6, Winter 2022-2023
Report on Recent Reports #3, Fall 2022
Report on Recent Reports #2, Summer 2022
Report on Recent Reports #1, Spring 2022
For more on reports and some 3000 organizations see The Security and Sustainability Guide
undoubtedly continue in the 2020s. Top climate scientists argue that “overshooting 1.5°C is fast becoming inevitable” (6:2). The Rhodium Climate Outlook projects temperatures between 2.3°C and 3.4°C by 2100 (6:3). James Hansen et al. state that global warming will exceed 2.0°C before 2050 (6:4). In their worrisome survey of potential global tipping points, Timothy Lenton et al. (6:5) identify 26 potential Earth system tipping points that are likely at today’s 1.2°C warming (e.g. coral reefs, permafrost), at 1.5°C (e.g. boreal forest, mangroves), and at 2.0°C (e.g. ice sheet collapse). These forecasts should be taken very seriously at COP29, with counter-arguments invited. None are in sight.

1.2. Adaptations

To transform our world to sustainability, various interdisciplinary insights are needed for the SDGs (6:6). More specifically, UNEP et al. calls for repurposing the annual $7 trillion in public and private capital flows into nature-negative activities such as fossil fuels (6:7). The Lancet Pathfinder Commission (6:8) argues that policies to mitigate climate change, often seen as negative, should emphasize the many health co-benefits. UNEP warns that cooling equipment demand due to global warming “will triple by 2050, resulting in a more than doubling of electricity consumption” (6:9), a variable that may have been overlooked by climate and energy forecasters. The Drought Resilience Alliance (6:10) estimates that 1.84 billion people are drought-stricken and proposes various actions. The IISD Earth Negotiations Bulletin (6:11) provides a lengthy guide to the “extremely complex issues” of climate change solutions. Equally complex, a World Economics Association Special Issue of RWER offers 23 essays on rethinking the discipline of economics as if ecology mattered (6:12).

1.3. Polycrisis

Beyond the immediate and visible problems of climate change, there are still other existential threats, also called a polycrisis, of nuclear weapons, biodiversity, pollution, rapidly spreading technologies such as AI, etc. A University of Stockholm team (6:13) identifies 14 dead ends where humanity could drive itself to extinction; 12 of them perhaps already in an advanced phase with hard-to-reverse lock-ons. In contrast to this technical article, the Center for the Study of Existential Risk at the University of Cambridge (6:14) offers a 300+ page introduction to existential risk studies for general audiences, followed by an anthology of major global risk articles.

[NOTE: 12 of the 14 items abstracted here were published in November or December 2023; 10 of these 12 appear to be timed for COP28 participants.]

RRR 6:1. Emissions Gap Report 2023: Broken Record—Temperatures Hit New Highs, Yet the World Fails to Cut Emissions (Again). UN Environment Programme, Nov 20 2023, 108p. The 14th annual edition “brings together many of the world’s top climate scientists to look at future trends.” Finds that “the world is heading for a temperature rise far above the Paris Agreement goals.” There has been progress since the goals were signed in 2015, when GHG emissions in 2030, based on policies in place, were expected to increase by 16%. The projected increase today is 3%. However, “GHG emissions still must fall by 28% for the 2°C pathway and 42% for the 1.5°C pathway.” The report looks at how more
robust implementation can improve the chances of bringing down emissions in 2035, and the potential risks of CO₂ removal methods. [ALSO SEE: The Global Climate 2011-2020: A Decade of Accelerating Climate Change (World Meteorological Organization, Dec 2023, 60p), noting that “each successive decade since the 1990s has been warmer than all previous decades,” with 2011-2020 as “the warmest decade on record by a clear margin for both land and ocean.”]

RRR 6:2. 10 New Insights in Climate Science. Future Earth, The Earth League, and The World Climate Research Programme, Dec 2023, 49p. An annual publication summarizing insights that were published between Jan 2022 and June 2023. 1) “Overshooting 1.5°C is fast becoming inevitable; minimizing the magnitude and duration of overshoot is essential”; 2) “No pathway remains that avoids exceeding 1.5°C global warming for at least some decades, except for truly radical transformations”; 3) Robust policies are needed to attain the scale needed for effective CO₂ removal; 4) Over-reliance on natural land and clean carbon sinks is a risky strategy; 5) Joint governance is needed to address the interlinked climate and biodiversity emergencies, e.g. ensuring that allocation of climate finance has nature-positive safeguards; 6) Compound events amplify climate risks and increase their uncertainty; 7) Mountain glacier loss is accelerating, threatening some 2 billion people downstream with water shortages; 8) Human immobility (inability or unwillingness to relocate) in climate risk areas is increasing; 9) New tools to seek justice enable more effective climate adaptation; 10) Food systems have a crucial role to play in climate action, with viable options from production to consumption.

RRR 6:3. Rhodium Climate Outlook: Probabilistic Projections of Energy Emissions and Global Temperature Rise. Kate Larson and 8 Others. Rhodium Group (Washington), Nov 30 2023, 29p. This initial RCO “addresses gaps left by existing global emissions and energy outlooks.” 1) We project likely temperature increases of 2.0 to 4.0°C by 2100, with a 2.3 to 3.4°C very likely range and a mean of 2.8°C; 2) The world has made progress in decarbonizing electricity and vehicles, such that emissions will decline through mid-century, but momentum in power and transport bottoms out afterwards, “as demand for more power and transportation continues to increase”; without ongoing support for storage, and advanced geothermal and nuclear, fossil fuels hang on and even expand; 3) we see a >50% chance that emissions from the industrial sector will rise over the coming decades as demand for industrial products (steel, cement, chemicals) grows; 4) Global fossil fuel consumption is likely to peak this decade, but the decline plateaus after 2060, and remains at >60% of today’s levels; 5) Keeping global temperature increase below 2°C will require mature clean energy technologies in all regions, and a significant decline in their costs.

RRR 6:4. “Global Warming in the Pipeline,” James E. Hansen and 17 Others, Oxford Open Climate Change, 3:1, Nov 2, 2023. Analysis of equilibrium global warming as a result of the decline of human-made aerosol emissions since 2010, “which should increase the 1970-2010 global warming rate of 0.18°C per decade to a post-2010 rate of at least 0.27°C per decade. Thus, under the present geopolitical approach to GHG emissions, “global warming will exceed 1.5°C in the 2020s and 2.0°C before 2050. Impacts on people and nature will accelerate as global warming increases hydrologic (weather) extremes.” Required actions
include a global increasing price on GHG emissions, abundant and affordable clean energy, East-West cooperation to accommodate developing world needs, and a phase-down of “today’s massive human-made ‘geo-transformation’ of Earth’s climate.” [NOTE: The lead author is associated with the Earth Institute at Columbia University and is widely known for his 1988 testimony to the US Congress on dangerous climate change.]

RRR 6:5 Global Tipping Points Report 2023. Timothy M. Lenton and 18 Others. University of Exeter Global Systems Initiative, Dec 2023, 478p; 32p Summary. Funded by the Bezos Earth Fund, this report launched at COP28 draws on work by >200 scientists and includes 109 pages of references. “Harmful tipping points in the natural world pose some of the gravest threats faced by humanity. Their triggering will severely damage our planet’s life-support systems and threaten the stability of our cities.” More than 25 Earth system tipping points have been identified: 6 in the cryosphere (e.g. the Greenland and West Antarctic ice sheets, dryland degradation, permafrost thaw), 16 in the biosphere (the Amazon and other forest dieback, coral reef die-off, mangroves, fishery collapse), and 4 ocean and atmosphere circulations (Atlantic Meridional Overturning Circulation/AMOC, the North Atlantic Subpolar Gyre/SPG, the Southern Ocean Overturning Circulation, and the West African monsoon).

At today’s 1.2°C warming, warm-water coral reefs are likely tipping, and “four other systems may pass tipping points”: the Greenland and West Antarctic ice sheets, the SPG, and parts of the permafrost. Passing 1.5°C warming, widespread mortality in coral reefs is very likely, and potential tipping systems become vulnerable for boreal forests, mangroves, and seagrass meadows. At 2°C warming, the Greenland and West Antarctic ice sheets will likely collapse. “Negative tipping points show that the threat posed by the climate and ecological crisis is far more severe than is commonly understood.” The total damage will be far more significant than the initial impacts, as effects cascade through social and economic systems and could exceed the ability of some countries to adapt.

“The world is on a disastrous trajectory.” There is no adequate global governance given the scale of the threats posed. Threats in the coming days could be catastrophic, including a global loss of capacity to grow major staple crops. Crossing one harmful tipping point could trigger others, causing a domino effect of accelerating change. “Prevention is only possible if societies and economic systems are transformed to rapidly reduce emissions and restore nature.” Incremental change is no longer an option. “Crucial to achieving this transformational change are positive tipping point opportunities, such as the accelerating

“An annual US$7 trillion in public and private capital flows into nature-negative activities in sectors including fossil fuels, agriculture and construction. Only US$200 billion per year goes towards nature-based solutions.”
rollout of electric vehicles.” [NOTE: Warnings of negative tipping points in the natural world are crucial, and hopes of “triggering positive tipping points” cannot be overlooked.]

However, no mention is made of negative tipping points in society, notably the COVID-19 pandemic and ugly wars in Ukraine and Gaza, diverting vast sums of money that could be spent for positive mitigation and adaptation. ALSO SEE: “Reframing the Threat of Global Warming: An Empirical Global Loop Diagram of Climate Change, Food Insecurity and Societal Collapse,” C. E. Richards et al., Climatic Change 164, Feb 19, 2021, on “increasing concern that climate change poses an existential threat to humanity.”

RRR 6:6. Transforming Our World: Interdisciplinary Insights on the Sustainable Development Goals. SDSN Europe, June 2023, 125p. The third report of the SDSN Senior Work Group on the European Green Deal, chaired by Jeffrey Sachs and Phoebe Koundouri, notes that today’s world stands at the crossroads of significant global challenges, which underscores “the essential role of sustainable development in forging a prosperous, equitable, and peaceful future for all.” Each chapter highlights significant considerations for driving sustainable development and achieving the SDGs. 1) The EU’s opportunity to redefine the landscape of global sustainable development challenges (the EU Green Deal is a key part of addressing externalities like deforestation and leveraging interconnected networks); 2) Private sector funding of the SDGs (on the increasing engagement from the finance industry—still small compared to the total capital required; challenges include competing demands on global capital, macro-headwinds repricing assets, the prevalence of greenwashing, and political backlash against ESG and sustainable investing); 3) Strong ESG momentum in international equity returns (on calculating the SDG footprint of a portfolio); 4) Interconnections of natural capital, social capital, produced capital, and cultural heritage in sustainable development; 5) Carbon farming and voluntary carbon markets (VCMs) in the EU (VCM efforts should focus on nature-based solutions); 6) The potential of green jobs and digital transition (on tracking energy employment to ensure good quality jobs, the greater percentage of high-skilled workers in the energy sector compared to other industries, and projections of energy employment in 2030); 7) Eco-anxiety and perception about governments (both have positive impacts on personal environmental responsibility; better communication about climate risks can encourage people to take more responsibility for eco-friendly actions). [ALSO SEE: the SDG Transformation Center, recently initiated by the Sustainable Development Solutions Network to support their proposed “Six Transformations” on universal quality education, universal health coverage, zero-carbon energy systems, sustainable agriculture and eco-systems, sustainable cities, and universal digital access and services.]

US$7 trillion in public and private capital flows into nature-negative activities in sectors including fossil fuels, agriculture and construction. Only US$200 billion per year goes towards nature-based solutions”. The $7 trillion figure is likely to be an underestimate in that it includes only direct impacts. These numbers must be flipped to promote a stable climate, healthy land, and nature. Nature-based solutions are cost-effective and provide multiple benefits; in contrast, 75% of the energy consumed still comes from fossil fuels, and 37% of the global land area is used for agriculture—one of the most significant drivers of biodiversity loss. Up to 40% of the planet’s land is degraded, impacting half of the human population; 95% of land could be degraded by 2050.

RRR 6:8. Pathways to a Healthy Net-Zero Future: The Lancet Pathfinder Commission Report. Lancet Pathfinder Commission, The Lancet, Nov 21 2023, 13p Summary. The world is heating alarmingly, and the WHO describes climate change as the greatest threat to human health. Despite growing awareness of this challenge, “actions are not being implemented at the rate or scale needed to avoid disaster.” The effects of policies needed to mitigate climate change are often presented as negative, but many of the interventions advocated bring an additional and positive benefit to better health. Emphasis on these health co-benefits (reduced air pollution, healthier diets, increased physical activity) can be a powerful incentive for more ambitious climate action. “Examples of implemented and evaluated transformative action are needed to inspire and inform change,” with more emphasis on the health effects of mitigation actions. Partners of the Commission’s first phase include the C40 Cities network, the OECD, CDP, SDSN, and the Alliance for Health Policy and Systems Research. The next phase of this Initiative will develop a coalition of partners committed to ambitious action.

RRR 6:9. Keeping It Chill: How to Meet Cooling Demand While Cutting Emissions. UN Environment Programme, Dec 2023, 121p. “As the world warms and as incomes and populations grow, demand for cooling is rapidly growing.” Based on current policies, “installed capacity of cooling equipment globally will triple by 2050, resulting in a more than doubling of electricity consumption.” This rapid increase will strain electricity grids in many countries, presenting a significant hurdle to the transition to renewable energy. In addition to emissions from electricity consumption, there are emissions from the release of refrigerant gases in cooling equipment, most of which have a higher global warming potential than CO₂. Chapters describe the urgent need for sustainable cooling (“one of the biggest opportunities to protect people, prosperity and the planet”), the pathway to near-zero emissions from cooling, the landscape of national cooling policies (regulatory instruments, capacity planning, market readiness for sustainable solutions), space cooling (an integrated whole-systems approach, technological innovation, overcoming barriers), refrigeration and cold chains, and low-emission refrigerants. [NOTE: The Cool Coalition led by UNEP prepared this “Global Cooling Watch 2023” report and, for the first time, undertakes modelling of the totality of direct and indirect emissions from cooling while considering cooling access needs. Reducing health risks is not mentioned, except in passing, but it is an obvious benefit.]
RRR 6:10. Global Drought Snapshot 2023: The Need for Proactive Action. International Drought Resilience Alliance, UN Convention to Combat Desertification, and United for Land, Dec 2023, 40p. Based on data from 101 county Parties to the UNCCD, “1.84 billion people are drought-stricken, of which 4.7% are exposed to severe or extreme drought.” Drought impacts are on the rise. Drought creates forced migration, causes famine, primarily affects women and children (and the poorest), and has cascading effects on ecological systems. The report describes false facts and fake solutions, options on the table, anecdotal hope for restoration and resilience, and the scale of needed commitment. Figures illustrate the global drought vulnerability index, drought hotspots, the case for proactive investment, holistic drought engagement’s four pillars, global paradoxes of wealth disparities, and military vs. environmental spending.

RRR 6:11. “On Behalf of My Delegation…” A Survival Guide for New and Lonely Climate Change Negotiators. IISD Earth Negotiations Bulletin, Second Edition, Dec 2023, 156p. The ENB is a project of the International Institute for Sustainable Development, with a staff of >200 and offices in Winnipeg, Geneva, Ottawa, and Toronto. The Bulletin, founded in 1992, is an independent reporting service on UN environmental and development negotiations. ENB works “to accelerate solutions for a stable climate, sustainable resource management, and fair economies. Our work inspires better decisions and sparks meaningful action to help people and the planet thrive.” This guide pays tribute to negotiators worldwide, especially from the Global South, who negotiate extremely complex climate change issues and are too often expected to learn on the fly. Chapters describe the climate change problem (the science, the impacts, mitigation and adaptation, loss and damage), evolution of the international climate regime (UNFCCC 1992, the Kyoto Protocol, the Paris Agreement), bodies in the regime, the rules of procedure, state and non-state actors, coalitions in the regime (divisions with and among groups), the G-77 and China, the ideal negotiator (preparations, positions, bargaining), the disadvantaged negotiator, and coping strategies (filling a hollow mandate, drafting, submitting, speaking, reaching closure). [NOTE: Hardly time for anyone at COP28 to digest, but likely to be very valuable for any negotiator at COP29 in Azerbaijan, and for anyone else who wishes to understand the complexities of these annual meetings.]

RRR 6:12 “How Can We Construct an Economics Consistent with the Biophysical Limits to Economic Growth?” World Economics Association, Real-World Economics Review 106, Special Issue, Dec 2023, 196p. The invitation to contribute views climate change “in an accelerating phase” and calls the title of the issue “a far bigger question than economists have ever addressed…it requires revisiting our discipline’s foundations.” The 23 essays that follow address economics as if ecology mattered (in this critical moment to reflect on what is at stake), an economic theory compatible with life processes and physical laws, six kinds of capital required for a healthy economy (financial, produced, natural, human, social, and systems), an economics of deep transformations (“holistic and interdisciplinary”), will economics ever become more ecological (60 years on from “The Limits to Growth”), putting energy back into economics, getting the concept of time suitable for Economics 101, adopting “complexity” in economics to resolve dilemmas in the Anthropocene, a new understanding of the modern division of labor, complex economies in the biosphere with the
commons restored, overcoming speciesism in economics, challenges of living in reciprocity with nature, the need to adopt a realist global political economy and a futures approach, economics of abundance with degrowth, livability within planetary limits, demographics and the economy, etc. [NOTE: Ecological economists at leading universities extensively describe an economics relevant for the real-world 21st century, but the “How” of communicating with and changing mainstream economics is ignored].

RRR 6:13. “Evolution of the Polycrisis: Anthropocene Traps that Challenge Global Sustainability,” Peter Søgaard Jørgensen (Stockholm Resilience Centre) and 12 Others, Philosophical Transactions of the Royal Society B (Biological Sciences) 379, Nov 13, 2023. The Anthropocene is characterized by accelerating change and global challenges of increasing complexity, what some have called a polycrisis. However, can this trajectory become a trap for humanity? A team from the University of Stockholm identifies 14 dead ends where humanity could drive itself to extinction. GLOBAL (5): over-simplification where systems are too specialized to adapt, non-stop pursuit of growth that harms well-being, overshoot using more than Earth can provide, international conflict, and infectious diseases; TECHNOLOGY (5): infrastructure lock-in (e.g., fossil fuels), chemical pollution, existential technology (e.g., nuclear arms), technological autonomy (AI), and dis/misinformation; STRUCTURAL (4): short-termism, overconsumption, biosphere disconnect, local social capital loss by a digital world. Ten of these traps have growing trends in their indicators; 12 may be in an advanced phase with hard-to-reverse lock-ons and a growing risk of negative impacts on human well-being. These traps often reinforce each other and rarely act in a dampening fashion.

RRR 6:14 The Era of Global Risk. Vol 1: An Introduction to Existential Risk Studies. Edited by SJ Beard, Martin Rees, Catherine Richards, and Clarissa Rios Rojas (all Centre for the Study of Existential Risk, Univ of Cambridge). Open Book Publishing, Fall 2023, 333p. Vol 2: An Anthology of Global Risk, edited by SJ Beard and Tom Hobson, Forthcoming. “This innovative and comprehensive collection of essays explores the biggest threats facing humanity in the 21st century; threats that... have the potential to bring about human extinction and civilization collapse.” Experts from many disciplines describe how we can understand these threats better, and “what can be done to manage them effectively.” Ten chapters discuss the history of existential risk and those who worked to mitigate it, theories and models predicting societal collapse, existential risk and science governance, global justice and global catastrophic risk, enabling everyone to reduce existential risk, natural global catastrophic risks, ecological breakdown and human extinction, minimizing potential harms in an age of biotechnology, a history of AI existential safety, and military AI as a contributor to global catastrophic risk. In the Preface, Martin Rees, the UK Astronomer Royal and co-founder of CSER in 2013, notes that “The Earth has existed for 45 million centuries, but this is the first century in which one dominant species—ours—can determine, for good or ill, the future of the entire biosphere... The worst threats to humanity are no longer ‘natural’ ones; they are caused (or at least aggravated) by us.” [ALSO SEE: New European Voices on Existential Risk (NEVER), a project convened by the European Leadership Network in Aug 2023 with 36 members on nuclear issues, climate change, biosecurity, and emerging disruptive technologies.]
Organization/Author Index
(Some titles have been abbreviated)

1. Beard, SJ, Martin Rees, Catherine Richards, and Clarissa Rios Rojas, eds. (see CSER, Cambridge, 6:14)
3. Earth League (see Future Earth, 6:2)
5. Economics of Land Degradation, The (see UNEP, 6:7)
6. Future Earth, 10 New Insights in Climate Science (Dec 2023, 49p) [6:2]
7. Global Canopy (see UNEP, 6:7)
10. International Institute for Sustainable Development (see Earth Negotiations Bulletin, 6:11)
12. Jørgensen, Peter Søgaard and 12 Others (see Stockholm Resilience Centre, 6:13)
14. Larson, Kate and 8 Others, Rhodium Climate Outlook (Nov 30, 2023, 29p) [6:3]
15. Lenton, Timothy M. and 18 Others (see Global Systems Initiative, University of Exeter, 6:5)
16. New European Voices on Existential Risk [6:14 Also See]
17. Rhodium Group, Rhodium Climate Outlook (Nov 30, 2023, 29p) [6:3]
18. SDSN Europe, Transforming Our World: Interdisciplinary Insights on the SDGs (June 2023, 125p) [6:6]
20. Sustainable Development Solutions Network (see SDSN Europe, 6:6)
21. UN Convention to Combat Desertification (see International Drought Resilience Alliance, 6:10)
23. UN Environment Programme, Keeping It Chill: How to Meet Cooling Demand (Dec 2023, 121p) [6:9]
25. United for Land (see International Drought Resilience Alliance, 6:10)
26. World Climate Research Programme (see Future Earth, 6:2)

Author’s Contact Information
Email: MMarien@twcny.rr.com
Human Security and Democracy: What’s next for Brazil

Saulo José Casali Bahia
Member, Board of Trustees, WAAS; Law Professor & Federal Judge, Brazil

Abstract

When discussing Human Security and Democracy, especially from a Brazilian perspective but also with global implications, it becomes essential to consider the impact and influence of what is commonly called cyber activism, which has started influencing public opinion and altered the approach to electoral outcomes. Thus, in contemporary societies, analyzing the exercise of democracy necessitates considering social control and efforts to combat intentional disinformation.

1. First Moment

Initially, cyber activism raised hopes for increased popular and citizen engagement by providing an alternative to conventional communication channels like radio, newspapers, and television. These social communication agents promoted direct interference in democratic and popular processes, due to the monopoly of the means of communication at their disposal, a monopoly that the State was always careful to preserve and regulate for the benefit and reproduction of the political game.

The cybernetic activism of the first phase broke with the access to information dominated by the traditional means of communication, and allowed the eruption of movements that were latent until then, since they were persecuted and left with an empty voice in the traditional press.

Initially, cybernetic activism appeared to be an ideal conduit for democracy, allowing every citizen an open role within social networks. What unfolded was a surge of movements in Brazil and globally, breaking free from previous constraints. The Arab world witnessed its Spring, with digital networks shaking traditional power structures, with the deposition of leaders and the renewal of parliaments. In Brazil, there was a powerful demonstration of cyberpower with the outbreak of the Fora Dilma (Brazilian former president) movement, which can be understood as the result of the very contradictions of the presidential regime, a minority in the world but adopted by Brazil and the USA—for example, and always a source of incessant crises.

Initially, there was an expectation of dialogue and interaction on social platforms—a promise of a brighter future through open, multi-subjective participation in networks. However, this vision diverged significantly from the reality presented by traditional journalistic networks, which often catered to those in positions of power.
There was an anticipation of heightened communication, quantitatively speaking, as cyberspace opened up to the information superhighway. Optimistic outcomes were envisioned.

John Perry Barlow even proposed a declaration of independence of cyberspace, stating: ‘Governments of the Industrial World, you weary giants of flesh and steel, I come from Cyberspace, the new home of Mind. On behalf of the future, I ask you of the past to leave us alone. You are not welcome among us. You have no sovereignty where we gather.’

That was the thesis of the occasion, almost a return to direct democracy, which was previously only possible in small social groups. Cyberspace would become the new Greek Agora!

Some have also connected the Protestant Reformation from centuries ago, where each individual was able to carry out their own interpretation of the Bible, fleeing the interpretation dominated by clerical structures, with the cybernetic revolution taking place in the world today. The translation of the Bible into vernacular (national) languages facilitated access to evangelical knowledge for everyone, leading to fresh insights.

2. Second Moment

Soon after, however, other social and political phenomena began to draw attention. Like Brexit (the exit of the United Kingdom from the European Union), where it was perceived that there was a very high manipulation of social networks in the sense of wanting to stay or not in the unified European political and economic space. Similarly, this interference was observed during the 2016 North American elections and the 2018 Brazilian elections. In these instances, service providers, who possess data on social media users, manipulated speeches to impact network users. They achieved this by disseminating meticulously crafted, massive messages designed to evoke emotional responses and sway opinions. Advertising agents swiftly recognized the potential of this new digital landscape and stepped into the familiar role they had traditionally played in the media.

More access is not necessarily synonymous with better information. It was clearly verified by the formation of vertical communicative chains and the clear presence of interference and control in the informational flow. At times, it was even possible to perceive the automation of content production and reproduction, making public deliberation even more vicious.

Digital activism then showed its other face: of intense fragmentation of the public sphere and polarization, inevitable in the presence of antagonistic hegemonic groups.

3. Third Moment

The manipulation of information in social networks thus brought unprecedented regulatory challenges. Governments had to be called back to reestablish the democratic space already appropriated by data brokers, since there was no perspective on self-regulation by the subjects who interacted in the networks.
By the way, Luhmann speaks of the functional differentiation of politics, when, in the first phase, the public sphere was seen as a moral court of politics (17th and 18th centuries), fulfilling the role of integrating different points of view since it served for free and spontaneous public deliberation. In the second phase (19th and 20th centuries), the public sphere would serve as a democratic reinforcement to parliament, in the belief that public opinion would direct the actions of politicians. Finally, in the third phase (the 21st century), with cyberspace, there would be the fragmentation of the public sphere and the emptying of democratic deliberation, which is what we are currently experiencing.

“Fake news thrives because it caters to what we like and want to hear. All fake news has a truth: a connection with our values.”

The difference of opinions does not come close to the idea of integrating opposing points of view. There is polarization, radicalization and intolerance. This phenomenon, typical of cyberspace, has been the object of concern for governments and has been studied all over the world. In several countries, personal data protection laws have already been created with an attempt to establish authorities that can create regulation and control for the trafficking and appropriation of data. When you have free access to cyberspace, with the absence of brakes and restrictions, the possibility of collecting and using personal information by data brokers and data units arises. The use of psychometric algorithms, with the reconstruction of the users’ profiles, allows for a comparative advantage and previously unimaginable advertising and suggestion initiatives. Knowing the most intimate desires of individuals in society, it is possible to direct information and create awareness among specific groups, creating clusters of people with the same values and preferences. These are the social bubbles, which will create a situation of self-reference where there is no circulation of new information but only the reinforcement of already known emotions. There is a kind of throwback to forums of like-minded people.

In this phase, with the free possibility of inserting information in the formed groups, the authority of the source (which existed in relation to the traditional means of communication) disappears, and there are no more interpretative parameters. There is erosion of the semiotic guarantors of the written texts because only similar visions circulate, reinforcing the known feeling.

When the individual manifests himself in cyberspace in favor of something (offering a like), when he shares the content of something, and even when he accesses or searches for something, he defines his profile and what he will start to receive (the same type of network information). The cyberspace players learn from the choices made, and will reinforce the cluster/bubble created, providing feedback to the user.

It is exactly similar to what happens with artificial intelligence, which by extracting prevailing data from the existing dataset, reinforces the patterns and biases already created. Artificial intelligence as it exists today looks to the past, not the future.
Communication becomes unilateral, even with the variety of sources that make it seem that there is a multilateral communicative character.

Our political thought becomes associative and affective, as it is associated with our desires, circulating no longer information, but emotion, which intensifies feelings and makes rational scrutiny disappear.

Precisely for this reason, fake news thrives because it caters to what we like and want to hear. All fake news has a truth: a connection with our values.

The European Commission, regarding fake news, has been trying to establish an important terminological differentiation, as there is disinformation (false news deliberately created to harm a person, social group, organization or country) and misinformation (when the false news is shared by people without knowing that it is false) or malinformation (news has a real basis but is modeled, aimed at causing harm, often attacking the private sphere).

4. Conclusion

The solution that governments envision involves creating a new legal framework for data brokers, a regulation for cyberspace, avoiding the verticalization and polarization that tend to happen, and abandoning reason for emotion.

A great example was the Cambridge Analytica episode, which involves microtargeting or consistent action in “using data to change behaviour”. With a small universe of individual data collection (300 thousand) around 90 million people were reached by the mere circumstance of the existence of links in social networks.

Democracy demands, therefore, the affirmation of the right to informative self-determination, where the protection of personal data is essential.

In Brazil, the national data protection authority was frustrated, despite the approval of the general data protection law. The compliance of companies is impeded in the name of cryptography, secrecy being justified on a false premise since virtual platforms are not mere intermediaries of information. They determine the content of the information, as businessman Mark Zuckerberg (Facebook) recognized in April 2018 in a 5-hour statement to the US Senate.

It is necessary to understand the real problem with social networks, and the existing risks to Democracy and Human Security, and the challenge posed to the use and manipulation of personal data in cyberspace.

Author’s Contact Information
Email: saulo.bahia@trf1.jus.br
Human Security and Socio-economic Agenda: Need for Refinement and Action

Joanilio Rodolpho Teixeira
Emeritus Professor, University of Brasilia; Fellow, World Academy of Art & Science

Abstract

The modern concept of security can be understood as the Socio-economic study of short, medium and long-term risks of society. The adoption of such an enlarged view expresses the new priorities, multidisciplinary relations and strategic conditions. Nowadays, security must encompass all fundamental aspects of human-based needs: health, feeding, employment, living standards, education, public confidence and social tolerance. It is necessary to integrate economic, social and environmental conditions, highlighting relevant priorities. This effort requires special attention to dignity, equity and solidarity. In this vein, it is necessary to consolidate democratic participation with free elections, tolerance of opposition and open discussion of necessities and initiatives. Human Security and the Socio-economic Agenda have made progress in dealing with some of the points proposed above, there are still “unfinished business and unresolved puzzles to solve,” including biological and physical wars.

“Fundamental perspectives must attempt to link security, technology and development agendas. It is necessary to integrate economic, social and environmental conditions, highlighting relevant priorities.”

Human Security requires a strong effort to deal with people’s necessities and what it means for all to be safe from harmful disruptions in their homes, jobs, communities, and environment. It is also concerned with our needs and hopes, our chance to develop our potential, especially for those who are most vulnerable. It is fundamental to provide people with key learnings and actions to cope with uncertainties, including climate risks.

Considering COVID-19, many people lost their jobs and abilities to maintain their incomes. Others, confined to their houses, experienced threats to personal security and severe
frustrations. Consider also families who have been forced to leave their homes and are still in need of places to live and to be safe. People who require the necessary income to survive also have community networks, a sense of belonging and ways to sustain their culture and dignity.

In response to the mentioned and other threats, needs and hopes, we consider that the learning and actions must be tackled together, comprehensively. Fundamental perspectives must attempt to link security, technology and development agendas. It is necessary to integrate economic, social and environmental conditions, highlighting relevant priorities. This effort requires special attention to dignity, equity and solidarity. In this vein, it is necessary to consolidate democratic participation with free elections, tolerance of opposition and open discussion of necessities and initiatives.

We may conclude that, although Human Security and the Socio-economic Agenda have made progress in dealing with some of the points proposed above, there are still “unfinished business and unresolved puzzles to solve,” including biological and physical wars.

Author’s Contact Information
Email: joanilioteixeira@hotmail.com
Revisiting the Power Triangle:
A Note on Spillover Effects of Positive Power Externalities

Danielle Sandi Pinheiro
Associate Professor, University of Brasília, Brazil
Associate Fellow, World Academy of Art & Science

Abstract

The environment is not an entity external to socioeconomic activities; but it directly interacts with and suffers from their effects. Sustainable development policies are a hard task for every country and power externalities may arise at any time. The spillover effects of power externalities additionally show us society’s responsibility towards economic choices of consumption and production. The spillover effects can clarify the channels through which the power externalities affect the environment and society as well. The spillover effects of positive power externalities can introduce the economics of a new paradigm that can be seen as strategic tracks to ensure food safety and human security in terms of sustainable economic development.

1. Introduction

When we consider social power analysis and governance tools in terms of welfare economic theory, an interconnection that has arisen is what I have described as power externality. The aim of this article is to revisit the concept of power externality, considering the spillover effects of positive power externalities as a way to channel both economic development and environmental policies.

Additionally, this analytical structure can offer ways of looking at environmental policies as tools that empower society to take actions towards production and consumption decisions based on the concept of economic efficiency. Also, these can be seen as strategic tracks to ensure food safety and human security in terms of sustainable economic development. As I previously introduced, power externality can be understood as a concept that suggests a way to look for a more integrated approach in sustainable development that deals with the interconnections among social power relations, economics and governance tools (Pinheiro 2019).

As it was previously pointed out, we can define power externality as a situation where the interconnected social power relations, jointly with the political-economic business cycles and governance agendas, affect a third part, in this case the environment, not directly related to this matter. The power externality concept considers the interconnections between economics and the entire system of social power relations and governance structures, as the power triangle suggests:
Revisiting the Power Triangle

Danielle Sandi Pinheiro

This analytical structure is based on interdisciplinary theoretical foundations in order to link the dimensions of public policies considering social power relations, governance structures, business cycles and the potential spillover effects of public policies on society. The spillover concept takes into account the effects of all the positive power externalities—beneficial spillovers to a third party or parties. The beneficial spillover effects are related to the social and environmental benefits of a new way of consumption or production. Additionally, they could be linked to the benefits generated by the public and/or the private sectors that develop or spread actions that produce positive power externalities.

The article is organized as follows: after this introduction, in Section 2, the concept of power externality is revisited. The spillover effects of positive power externalities are shown in a schematic structure in Section 3. It illustrates how different aspects of social power relations interact together with governance and economic/business cycles to spillover positive power externalities. Section 4 summarizes the main conclusions, as well as possible horizons for future research and potential empirical approaches.

2. Power Externality

In a previous article (Pinheiro 2019), I argued that considering the interconnections among the economic business cycles, the governance structures and the different levels of social power relations, the controversial actions concerning the sustainable development and environmental change agendas in Brazil was a result of a negative power externality. In this sense, I defined negative power externality as a situation where, although the government and society are conscientious about the challenges and risks of exploiting the natural resources because of the flexibility and interchangeability between power relations, jointly with the political-economic business cycles and governance agendas, the best choices in terms of climate and sustainable development policies are not fulfilled as expected and, as a result,
the environment is harmed. Likewise, in economic theory, we can have a positive power externality too.

I defined a positive power externality as a situation where, although the government and society are conscientious about the challenges and risks of exploiting the natural resources, because of the flexibility and interchangeability between power relations, jointly with the political-economic business cycles and governance agendas, the best choices in terms of climate and sustainable development policies are more likely to be achieved and the environment is benefited. A positive power externality is a good outcome for the environment and society as a whole since it spreads improvements in general.

There are two traditional governance approaches to handle the government and society tradeoffs between environmental and sustainable development policies: the top-down approach and the bottom-up approach. The top-down approach settles assurance problems through legally binding obligations. On the other hand, the bottom-up approach has confidence in transparent and voluntary commitments that are subject to regular reviews. A mixed approach is possible too. Following this way, countries accept a bottom-up structure in terms of conventional frameworks and then adopt top-down protocols within a convention that bind them to accomplish obligations.

In a strictly economic view, these governance approaches could be seen as a way to deal with the contentiousness between what global society needs in terms of consumption and production and the scarcity of natural resources. A world of free market relations and spontaneous environmental and climate consensus, in terms of political thought and economic sustainable use of natural resources can be seen as the first-best outcome, in analogy with the Pareto efficiency criterion in the welfare theory of economics. The earliest works that support the efficiency criterion argument can be found in Pareto and Lancaster (1906) and Lipsey (1956). However, this scenario is not achievable. Therefore, the governance challenge faced by governments and civil society relies on how to perform the governance approaches since the countries have different levels of development and socio-economic needs that frequently put in check the achievement of a climate change consensus.

For instance, the second-best situation is more likely to be reached in the real world and the governance structures play a crucial role in terms of the second-best sustainable and environmental policies since the first-best option is never achievable. This means that the ideal or first-best solution of a full environmental consensus in terms of sustainable use of the natural resources that would generate global efficiency is not feasible. In this situation, it is not clear if only one or a few environmentally committed countries will be able to increase the efficiency of sustainable policies as a whole. Thus, the countries may often have to negotiate in terms of the governance structures that are more achievable, as we argued before.

The outcome of the countries’ negotiations is the second-best solution and we consider that it denotes a result of exercising institutional power. Institutional power as a way of reaching a second-best solution indicates an exercise of power through the authority of formal social power systems and institutions. The power externality triangle we are proposing shows us that beyond the business cycles’ concept, there are two other concepts embracing governance and social power. These three concepts put together demonstrate that sustainable
development and climate change policies need critical thought and effective actions on the part of civil society, business actors, institutions and governments.

Both types of power externality end in allocative inefficiency. This allocative inefficiency could be interpreted as follows: due to flexibility and interchangeability between power relations, business cycles and governance agendas, the first best solution, in terms of free competitive decision-making by the economic agents (or actors) in countries, or the first-best choices, in terms of spontaneous and consensual sustainable development policies, are not performed as expected. In this sense, sustainable development policies and climate change actions are a result of institutional power and other forms of social power negotiations that produce the second-best solution. In this context, the second-best solution in terms of the different social power interactions in the power triangle gives us a mechanism to overcome power externalities by means of economic and public policies and public administration.

2.1. Overcoming Power Externalities

Figure 2 shows us an interpretative scheme of the second-best solution among the three pillars of the power externality triangle. The second-best solutions come from policies that can overcome power externalities. The first one links social power relations and economics (business cycles). The second one considers the linkage between economics and governance. Finally, the last linkage covers governance and social power levels. These linkages could be exercised through interconnections along the integrated system of the power triangle.

When we link social power with the business cycle’s axis, a way to overcome power externalities that may arise considers the government’s power in planning, organizing, coordinating and managing the economic and social systems. Public policy is a process of selecting strategies and making choices. In this sense, the public policy ways of overcoming externality may include some steps like getting an agenda, policy formulation, policy adoption, policy implementation, and so on.

A way of overcoming power externalities that may arise from the linkage between business cycles and governance should contemplate an appropriate economic policy in the exercise of institutionalized power by governments, since the economic agents by themselves do not consider the entire effects of their activities over nature or society as a whole. As Pigou (1920) noted in his book—*The Economics of Welfare*—“private businesses pursued their own private interests and were not concerned with external costs to others in society” since they have no incentives to internalize the full social costs of their actions. This is an early exposition of the externality concept in economics.

The Pigouvian approach considers taxes and subsidies as ways of overcoming externalities that may arise from the market economy. In the same way, the tax approach can be used in a corrective manner in order to diminish the consequences of a negative power externality. Alternatively, subsidies stimulate positive power externalities. A more recent approach to Pigouvian taxes can be found in Broadway and Tremblay (2008).

The linkage between governance and social power may consider elements of the new governance literature that address the role of markets, governments, networks and non-state
actors. For an appropriate discussion, see Lobel (2012). This approach meets the perspective of exercising the different levels of social power, as I described in the social power axis in figure 2. The ways of overcoming the externalities that may arise should contemplate appropriate public management and budget policies.

3. Spillover Effects of Positive Power Externalities

Positive power externalities generated by environmental policies, like stimulating renewable clean energy, emphasize a way to demonstrate the potential spillover beneficial effects of the multiple social actions and public policies chosen by society. Broadly speaking, the spillover effect refers to the impact that seemingly unrelated events can have on societies and the environment. There are positive and negative spillover effects. Although this concept is most commonly applied to the negative impact that a domestic event has on other countries, such as an earthquake, stock market crisis, or another macro event, positive spillover events may occur and should be stimulated. Positive spillover effects occur when changes in one behavior influence changes in subsequent practices in an efficient way.

Spillover effects are a type of network effect that can increase if there is leadership and incentive. Therefore, if we consider the spillover effects of positive power externalities
generated by human activities and/or appropriated public policies by governments, there will be a vast field of effective networking actions that can be implemented by society.

According to Nielsen, Bergquist and Schultz (2017, p. 574), “when implementing environmental education and interventions to promote one pro-environmental behavior, it is seldom asked if and how non-target pro-environmental behaviors are affected. The spillover effect proposes that engaging in one behavior affects the probability of engaging or disengaging in a second behavior. Therefore, the positive spillover effect predicts that interventions targeting one specific behavioral have the capacity to promote non-targeted and/or future pro-environmental behaviors”. Therefore, social actions and government policies can not only stimulate positive power externalities but also the pro-environmental behavioral aspects of them.

In the same way, the International Renewable Energy Agency (IRENA) stresses on its webpage that “Latin America hosts some of the most dynamic renewable energy markets in the world, with more than a quarter of primary energy coming from renewables, twice the global average. Power sectors in the region are characterised by a high dependence on hydropower, and exploiting the complementarity between hydropower and variable renewable energy sources is a key leveraging factor for all renewables in Latin America. (IRENA webpage, September 2021)

“Countries are beginning to address diversification efforts in electricity systems and are working to create more enabling policy and regulatory environments. In this context, recent auctions in Argentina, Brazil, Mexico, Chile, and Peru have helped to accelerate the deployment of thousands of megawatts of wind and solar energy in the region”.

“Total investment in power generation reached almost USD 120 billion between 2010 and 2015, including USD 38 billion for large-scale hydropower. Costs for renewable energy technologies have fallen to the extent that solar and onshore wind power no longer need financial support to compete with conventional power generation in a growing number of Latin American countries” (IRENA Webpage: irena.org).

We can see that these very prominent international agencies address the relevance of investment in pro-environmental sources of energy, like renewable energy, as a way of optimizing energy generation. The growing use of renewable energy generates positive spillover effects of power externalities. Even in the context of adverse shocks and economic constraints, like the COVID-19 pandemic and the strong lobbying about fossil sources of energy, there are many ways to generate positive spillover effects and power externalities that come from working with renewable sources of energy.

According to Alvarez-Pereira (2019, p. 7), “for many, the transformation of economic processes cannot happen without a shift in our behaviour as consumers. This is one of many reasons to address Inner Transformation as another perspective on systemic change. It is a call to individuals to move from awareness and the anxiety it brings towards higher levels of consciousness about our relationships with others and with nature as a whole”.

Considering this argument, I add that the present need for reviewing the economic development tools and the ways they interact with the society makes it is clear the importance
of building new sustainable matrices of production and consumption is necessary. It definitely shows that renewable energy sources are the future of economic activities. These ways can be stimulated by positive spillover effects of power externalities. Positive power externalities can come from an entire net of social power actors, institutions and economic agents with a social power leadership structure, as we can see from figure 3.

Figure 3. Spillover Effects of Positive Power Externalities (solar energy scenario)

In the long run, society will see the net benefits of clean energy by transforming its traditional ways of production and consumption into new ones. Besides future positive spillover effects, it could take a considerable time for this switch to occur. Many countries may be reluctant to invest in solar energy plants when they are still more expensive. Besides,
they may be unwilling to invest money in developing new power stations, and out of habit, they may continue to use fossil fuels. Also, it will depend on how governments respond.

“The environment is not an entity external to socioeconomic activities; it directly suffers from their effects.”

The falling price of solar energy suggests there may soon be a market incentive to use solar energy rather than fossil fuels. Nevertheless, that has not quite happened yet. Given the positive externalities of solar power, there is a case for the government to subsidize solar energy to encourage its take-up rate. This potential positive spillover impact would improve social efficiency because it would speed up the adoption of solar energy and reduce the costs of burning fossil fuels.

There will be a negative impact on other industries. There may be a greater incentive to develop electric-powered cars or electric trains, which can be powered by solar energy. In the long run, this would reduce the demand for oil and natural gas. These positive spillover effects will change the paradigms of traditional ways of consumption and production. The social power relations will be affected, and the governments will be required to respond. The economics of a new paradigm will face a rupture with the old ones. Leadership to meet the challenges of the century will demand a precise observation of economic/business chains and the spillover effects related to them.

4. Final Remarks

It is worth highlighting that the aim of this note is not to develop an entire analytical structure but just to delineate a starting point for a more integrated system of thinking considering the dynamic interconnections among economics, governance and social power relations and the challenges in terms of sustainable development policies that policymakers are facing nowadays. In this sense, this note will contemplate just an introductory proposition concerning some theoretical topics as ways to overcome power externalities through spillover effects of positive power externalities.

The concept of power externality comprises social power relations as the main vortex of a sustainable development puzzle that contemplates the economic market system (the business cycles) and governance aspects. It should be noted that in economic theory as well, power externality refers to a free market failure. Accordingly, it is necessary to intervene in order to overcome this failure. This intervention can be extended to all economic agents and levels of government that may exercise power at a national level or at a global level by international organizations when we consider sustainable development policies.

Driving sustainable development policies is a hard task for every society and power externalities may arise at any time. It must be stressed that power externality is not a permanent situation since it could oscillate according to the multiple elements of the dynamic power externality triangle. In this sense, whenever a part of the triangle works in a bad sense
in terms of economic sustainability and environmental system as a whole, the power relations could work jointly with the public policies and the governance structures in order to reach an integrated reorientation of the power externality triangle. In the case of positive power externality, the power triangle enables policymakers and economic agents to identify policies that may stimulate the best practices and the social and economic tools that improve them. (Pinheiro, 2019).

In this sense, power externalities show us the relevance of societies’ choices, channeling the positive spillover effects of public policies and social actions. The decision-making process of appropriate public policies stimulating positive power externalities should take into account that the power externality triangle elements are continually interacting and affecting each other. This notion aims to lay the foundations for the analysis of multiple scenarios and strategies in order to identify and stimulate positive spillover effects of power externalities. The environment is not an entity external to socioeconomic activities; it directly suffers from their effects. The principle of spillover power externalities considers the effects of spreading positive or negative power externalities over the planet, which includes the environment as well.

In terms of future research, positive power externalities’ origins could be empirically explored. Future research agendas may consider developing a detailed power externality matrix regarding public policies and social actions that can better generate positive spillover effects. The positive spillover effects may change the paradigms of traditional ways of consumption and production. The environment must be seen as an entity in society’s decision-making system. The power externality spillover effects can clarify the ways in which social power relations affect the environment and society. The governments will be claimed to better respond. The economics of a new paradigm will face a rupture with the old structures that disregard the interaction between the environment and society. In this sense, leadership to meet the challenges of the century will demand a precise observation of an entire chain of spillover effects of power externalities.

Author’s Contact Information
Email: danielle.sandi@gmail.com

Bibliography
Revisiting the Power Triangle

Danielle Sandi Pinheiro

Uncertainty: The New Situation

Gilberto C. Gallopín
Independent Researcher;
Fellow, World Academy of Art & Science

Abstract

In this short article, the author will present his vision and concerns about some mega-processes that are already beginning to impact Latin America (and the World), which he believes will radically change the frame of reference for policies and development strategies in the region.

1. Some Conceptual Clarifications

Given the diversity of interpretations of some of the central concepts underlying the discussions on Latin American development, it seems relevant to make explicit my perception and definition of them, as I will use them in this article.

First, the very concept of development: the notion has been sometimes manipulated and distorted, often being used as a synonym for economic growth. Already in the 1960s, at the global and regional level, there was talk of “Another development”, in response to the widespread perception that we were moving in the wrong direction, and not exclusively because of environmental degradation, but in a broader sense: it was felt that, globally, we were living in an unjust society and that it was imperative to generate a new international order based on the idea that another kind of development was possible, with much more desirable goals for humanity, compatible with the environment, that would definitively eliminate the scourge of poverty and that would be much more solidarity with the developing countries.\(^1\) The concept of development, in its original meaning of unfolding potentialities and not of mere economic growth (which is only a means and not in all cases necessary) is still fully valid.

The same is true of the concept of sustainable development (different from mere sustainability)\(^2\); it has also been widely manipulated and misused, but I believe it is still fundamental, containing its three basic dimensions (or pillars): social, economic and environmental.

The concept of “Buen vivir” (good living) indigenous to Latin America and other older civilizations like it has been proposed as a better indicator of progress than gross national product, and it certainly is, but it is not a replacement for the concept of sustainable development nor for the concept of development. I view buen vivir as the result of a successful sustainable development process. In the Latin American World Model (LAWM)\(^3\), we proposed a process that led to fulfilling the universal basic needs for nutrition, housing, health, and education and, in a central place, the participation of the members of society in the decisions. If this were achieved, each society would endogenously define the type of life desired and how to
satisfy other non-universal needs. The result, from today’s perspective, would be *Buen vivir*. The process was essentially sustainable development (although the term did not yet exist at the time the LAWM was published, the model integrated environmental, social and economic dimensions). The model showed that the goal was reachable with the human, economic, and natural resources available in the region, and the limits to development were not physical but socio-political.

2. The Unit of Analysis and Action

A frequent situation is the separation between the discourses of environmental and social issues. This dichotomization also extends to analyses and, more critically to policies and actions.

The problem is that scientific studies have abundantly shown that human activities and the environment are functionally coupled and therefore co-determined, making it impossible to fully understand social dynamics without at least considering what is happening in the environment with which that society interacts, nor can ecological dynamics be understood without considering the actions and interactions with the society with which it interacts. Moreover, as both ecological and social systems are strongly non-linear, complex and capable of self-organization, these interactions are multiple and change over time.

Therefore, the natural unit of analysis for understanding, planning, and action should be the coupled system as a whole, or what I have defined as the “socio-ecological system” (SES) on the appropriate scale, from local to global. This, in turn, requires an inter- or transdisciplinary view and a systemic or integrated approach.

This applies also to the concept of Human Security. Granoff and Jacobs have eloquently argued that Human Security must be defined in an integrative manner, and that it should not be confined to the military, political, or police dimensions.

Human Security is closely associated with one of the basic human needs, that of protection, at the individual, society or humanity scale. At the level of the person, human needs are part of one of the two basic components of the Quality of Life (the ultimate goal of development): health and the subjective sense of Satisfaction. Health (in the broad definition of the World Health Organization) results from the fulfillment of Human Needs. At the societal and humanity levels, the notion of requirements can be used instead of needs.

Thus, while the focus of interest may be centered on the concept of Human Security, the unit of analysis should take into account the broader SES involved.

3. New Problems

On a global scale, for the first time in the history of civilization, the “Earth System” has been subject to the confluence and coupling of the globalization process (economic, cultural, etc.), whose apparent rationale is economic maximization, with global environmental change, whose “logic” is the ecological one, of resilience, diversity and redundancy: two complex giga processes interacting under different logics and dynamics. This intermingling
of economic, ecologic, cultural, political, social and demographic factors, associated with the increasing scale and speed of the human capacity to make planetary changes, has led to an unprecedented connection of anthropic and ecological phenomena on a global scale.

This functional coupling includes a qualitative leap in interdependence; historically, the so-called North (the industrial or “first world” countries) exerted and still exerts a dominant influence on the countries of the South. But today, for the first time, poverty in the South can concretely affect the well-being of the inhabitants of the North (for example, deforestation contributes to climate change, which affects everyone on the planet, whether in the South or the North); also international migrations from the South to the North, driven by poverty and inequalities, wars, repression and environmental degradation are impacting), not to mention global terrorism and drug trafficking, which are phenomena of complex genesis but clearly not unrelated to inequality between countries and the loss of hope.

In the past, the North-South relationship was marked by dependence; today, increasingly, interdependence is the relationship on the rise for the reasons mentioned above, which does not imply symmetry (today, in many respects, the influence of the North upon the South is preponderant).

The global power structure is also changing rapidly; in just three decades, we have changed from a bipolar world to a unipolar one, which is already hinting at multipolarity. With the rise of China, world power is again diversifying, and even more so with the emergence, with ups and downs, of the BRICS group (Brazil, Russia, India, China and South Africa). This diversification, which is an interesting change from the previous situation, does not, however, guarantee a more equitable world; this group does not define an alternative to the dominant development style but perpetuates it. Although it is still impossible to anticipate the results and future direction of these geopolitical processes, the new powers will not necessarily be more supportive of global development than the current ones (China, the least capitalist of the new competitors for world power, is increasingly investing in the natural resources of developing countries but to secure resources for its own consumption).

The current war in Ukraine threatens global political security and contributes to world economic instability.

The environmental deterioration at the planetary level is dramatic; it is already known that, at least with respect to climate change, the planet has been pushed into a new state (no-analogue state), in which climatic conditions and other environmental variables have moved out of the range of at least the last half million years. The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) has launched its reports, warning of an unprecedented decline in Nature and ecosystem services and an acceleration of species extinction rates that can only be resolved through “transformative changes”.

The Sustainable Development Goals are not being reached in Latin America and other regions of the world.

The relevance of the changes can be exemplified by trends on two different fronts: one social and the other environmental. On the social front, inequality has increased dramatically.
On the climate front, changes are occurring faster than predicted; moreover, recent findings from a cross-comparison of the predictions of major climate models show that all models exhibit abrupt changes in the global climate system, with eighteen out of a total of thirty-seven showing abrupt changes as global temperature approaches those of 2°C. This is very alarming, since the target of 2°C or less is the current international political consensus. Such abrupt changes may mean that some of the so-called planetary tipping points are exceeded, with enormous negative consequences.

“The current global trajectory is unsustainable. This does not mean that the world is ending or that life on Earth is coming to an end, but rather that the “business as usual” scenario, in addition to being undesirable, is simply unfeasible and that, for better or worse, in the coming decades humanity will inevitably change its trajectory, whether nations want it to or not.”

From this unprecedented planetary situation of high and growing complexity, interdependence, acceleration and magnification of changes, a great uncertainty emerges—which clashes with minds and institutions educated in the illusion of certainty—as to whether it is possible to plan with a high degree of confidence and whether what is not known now can always be known (at least in terms of probabilities) with more research. This tradition of thinking and policy-making dates back to the 19th century and earlier, but is still alive and well in most educational and institutional settings.

In any complex system (even in something as minimal as a physical-chemical reaction), there is usually an inherent uncertainty that cannot be eradicated with further observations—a true indeterminacy. This means that unpredictability and surprise can be built into the fabric of reality, not only at the microscopic level (i.e., the well-established Heisenberg uncertainty principle) but also at the macroscopic scale. This obviously occurs more intensely in socio-ecological systems, where inherent uncertainties are combined with those due to ignorance and those arising from the human capacity to make deliberate changes and to exercise the possibility of choice.

We are living in the midst of a convergence of many rapid, and some unprecedented, megatrends. The fundamental uncertainty about our future as a species and as elements of the global SES to which we belong comes from the deeper impact of the fusion and interactions among those social, technological, economic, cultural, and environmental processes, and not just from the simple summation of those. As emphasized by Klaus Schwab, this is what makes the “fourth industrial revolution” fundamentally different from previous revolutions. And these megatrends operate within a strongly connected (and increasingly so) system, the global SES. A large number of causal links have been discovered, but many more have not yet been identified. Thus, we are facing large uncertainties associated with these megatrends.
within a global system whose structure and dynamics we only partially know. This situation is a critical one: new opportunities may arise (but can we identify and act in a timely way to bring them into being?), but huge threats also loom ahead.

What kind of thinking is required when we are in these situations? What kind of decisions do we need to make? This is a huge topic for reflection, analysis and research. Thinking and acting in a new way. Latin America has some comparative advantages: in practice, it probably has had more interdisciplinary exercises in living with uncertainty than most of the Global North countries. It has also had original thinking in other aspects, not only from the environmental but also from the economic, social, cultural and technological points of view. It has a critical mass and shared cultural roots that, if mobilized in an articulated manner, can have a great effect (something that does not happen in other more culturally fragmented regions). The region has clear fragilities and weaknesses in the face of the current and new situations. But it has also shown in the past important resilience and creativity in the face of changes and new situations.

4. What to do?

There is ample evidence that the current global trajectory is unsustainable. This does not mean that the world is ending or that life on Earth is coming to an end, but rather that the “business as usual” scenario, in addition to being undesirable, is simply unfeasible and that, for better or worse, in the coming decades humanity will inevitably change its trajectory, whether nations want it to or not. We live in times of bifurcating futures. Some are frankly disastrous, others barely tolerable, and some desirable.

In the situation the Earth System has reached, to escape from the trajectory of irreversible socio-environmental degradation, it will not be enough to promote the Sustainable Development Goals or make gatopardistic commitments or cosmetic changes. Changes are required in at least four key areas:

• Fundamental societal values (from consumerism and egoism to moderation of material consumption, solidarity, and sustainability)
• Consumption and production patterns (sustainable decrease in countries with material overconsumption, initial sustainable growth in countries with unsatisfied material human needs—until they are satisfied—qualitative changes in the composition of consumption).
• Education and training in new knowledge and skills.
• Development of symbiotic forms of society-nature relationship.

5. Implications

Some policy implications that could be drawn from the precedent considerations are:

• The crisis we face is systemic, not sectoral or incremental. Systemic problems require integrated systemic (or, what is now called transformational) approaches.
• Fragmented and incoherent measures and policies will not provide a solution to a systemic crisis; they may, on the contrary, aggravate it. Along these lines, a reconsideration of the Sustainable Development Goals is urgently needed to ensure their coherence and synergy.

• The importance of reinforcing long-term systemic perspective in the analysis of policies, considering them in the context of a set of concerted policies of different sectors, and articulating social, environmental, institutional and economic policies.

• The need to implement an international effort to identify and monitor the set of major trends that could significantly modify the global trajectory toward desirable (or away from undesirable) futures.

• The need to agree internationally on the minimum set of attributes sufficient to consider a future state of the world as desirable (or at least acceptable). One mechanism, in addition to national, regional and global discussions and agreements, could be the facilitation of citizen participation on different scales, from local to global, to reach basic agreements. The participation of the media and different social actors could enhance the impact. It cannot be ignored that the attempts to reach these agreements will unavoidably collide with the national and international vested interests and current power structure, and therefore one of the major challenges will be to gather the necessary political will to change course.

• The need to establish international regulatory mechanisms to redirect the systemic crisis towards a sustainable and acceptable trajectory. This could be done through the United Nations (at the moment the only body with broad international legitimacy), with the intellectual and political support of a new international body of committed scientists, thinkers and politicians along the lines of the IPCC.†

• The need to identify and implement strategic measures to change course, and to select the most sensitive causal nodes for the application of the respective actions.

That being said, and considering the narrowing and closing of windows of opportunity for a number of issues (such as climate change, species extinction, etc.), the accumulation of signs that we are heading in the wrong directions, and the prevailing political inertia and shortsightedness, perhaps the best hope lies in the growing ferment of discontent among young people, both in Latin America and globally, as they realize that a cultural change, a change of values, is the only possible way out, towards a less consumerist, more caring, sustainable and desirable society. Today, it is the children of the world who are emerging as significant actors.

Latin America and the Caribbean could, and should, play a significant role in the transformation. An important contribution of the region could be to initiate activities in the

* The well-known system sub-optimization effect.
† Intergovernmental Panel on Climate Change
area of uncertainty management and identification of appropriate strategies, the integrated management of complex systems such as socio-ecological ones, and the identification of systemic solutions to the region’s sustainable development problems.

The old adage that says “A crisis is also an opportunity” gains additional force from a system theoretical and complex theory perspective:

- A crisis tests the system and strengthens its capacity for response and innovation (it can also destroy it).
- A system in crisis becomes vulnerable to change (even small but critical ones) and therefore opens an opportunity to change direction and make positive changes.

The change of trajectory is necessary and urgent. But it is not automatic. Only humans can make it possible.

Author’s Contact Information
Email: ggallopin@gmail.com

Bibliography

The Roots of Human Insecurity

Neantra Saavedra-Rivano
Professor Emeritus, University of Tsukuba;
Fellow, World Academy of Art & Science

Abstract

What follows are notes attempting to place into context the current discussion on Human (In)Security with special attention to the case of Brazil. In this article, we will observe that insecurity has been the norm since pre-historic times. We will also observe that the uncertainties associated with this insecurity have been the engine for the development of social institutions, of technologies, and of sets of beliefs of human societies. It will also explore how this creative process engendered new sources of uncertainty and insecurity in such a way that the world, as if playing a multistage game, never ceases to encounter new challenges, eventually reaching the current situation where we face a complex of crises, some of them threatening our very existence as a species. After this exposé of human security in general, we turn our attention to peripheral countries. Inequalities among nations have prevented peripheral countries from developing civilizational tools of the same quality as those of core countries. Peripheral countries are still confronting ancient challenges such as food insecurity and vulnerability to natural disasters. To the extent that their institutions and technologies are insufficient to meet them, they face the mistrust of populations in peripheral countries. The concluding remarks present the case of Brazil as an example of this situation.

“Uncertainty and human insecurity have been, throughout history, not only the underlying condition but also the engine for what we call progress.”

1. The Eternal Quest for Human Security

Human insecurity has been a constant feature of daily life throughout history. Primitive man lived in an environment that was basically hostile, facing permanent challenges from wild animals, disease, frequently inclement weather and, not least, other humans. Insecurity was, of course, associated with uncertainty about the surrounding environment. Being a social and intelligent species, humans have progressively developed material, intellectual and societal tools to overcome these challenges. Social structures and institutions were developed to pool and organize individual resources; ideas about the surrounding environment led to the creation of new knowledge and beliefs, and technologies were developed. All these advances reduced uncertainty, controlled risks, and provided an increasing sense of security.
As argued by Douglass North (2005), uncertainty “has been the underlying condition for the evolving structure of human organization throughout history and pre-history.” As history shows, advances in knowledge, beliefs and social structures would in turn create new challenges and uncertainties and produce a new cycle of social innovation and technological advances. The situation could be compared to a game where mankind fights a set of challenges successfully so as to progress to the next stage of the game, only to face new challenges. Thus, uncertainty and human insecurity have been, throughout history, not only the underlying condition but also the engine for what we call progress. This latter point was also made in a largely forgotten paper by Ronald Heiner (1983), where he criticized the common assumption of rationality of economic agents, arguing that, instead, agents’ behavior was driven by the uncertainty surrounding them.

2. From Primordial Insecurity to Modern Challenges

As societies became more complex, new uncertainties and sources of human insecurity appeared. Some of the ancient challenges were not entirely tamed, such as pandemics, natural catastrophes, and wars. In addition, an entirely new type of source of insecurity appeared, namely man-made crises such as the environmental crisis, the financial crisis and the demographic crisis (see IPCC, 2023 on the environmental crisis, Wolf, 2014 for the financial crisis, and United Nations, 2022 for the demographic crisis). All of these were provoked by technological advances, which led to critical developments. Technological progress translated into industrial development and medical advances, which made possible large increases in population stocks. Larger and more prosperous populations are pushing the limits of our environment. Given the increasing integration of human societies, another consequence of technological progress, these crises are of a global nature. As a result, the world shares new sources of human insecurity. Saavedra-Rivano (2016) further develops the preceding discussion to provide elements for a theory of global crises.

3. Existential Crises

The extent of human insecurity is well conveyed by the fact that some of these global crises are termed “existential crises”, that is, challenges that may eventually threaten the very existence of our species or of the planet we inhabit. The environmental crisis is, according to most scientists, such an example, and it finally begins to be taken seriously by world governments. Another emerging threat to mankind is the development of artificial intelligence (AI) which, if unchecked, could lead to AI entities taking control of our lives. Saavedra-Rivano (2020) develops in some detail this latest existential crisis.

The combination of these crises presents the world with a very complex and dangerous situation. Referring to the previous game analogy, would this be the endgame? Being more positive, we would argue that the current situation, when risks to our security are global, calls for the development of a new set of institutions of global governance. Elements for some of these institutions already exist, such as those created by the United Nations Framework Convention for Climate Change (UNFCCC), although their authority is limited. Others are entirely lacking, as is the case for an international AI authority.
4. Peripheral Countries

Even in core countries, such as those in Europe, North America and Japan, public perception of the seriousness of the security situation is limited, although a feeling of insecurity is present. That perception is much more limited in peripheral countries, such as those in Latin America, Africa and most of Asia, and populations are basically oblivious to those risks. Human insecurity in those countries is dominated by more ancient risks, such as hunger, vulnerability to natural disasters, and economic insecurity.

We can say that the social and political institutions that were developed to cope with these risks have been largely unsuccessful in peripheral countries. Inequality within those countries is both a cause and effect of these failures. Another reason for this situation is that the knowledge and institutional developments that originated in core countries have not spread fully to peripheral countries. Inequality among countries is increasing, with negative effects both for core and peripheral countries.

5. Concluding Remarks

We will use this last section to apply the earlier discussion to the case of Brazil. Brazil is an interesting example, being a large peripheral country that deserves to play a more central role in the world. As with others, however, most of its population ignores the climate crisis or the risks posed by AI, to mention two of the most prominent global crises. However, there is a high degree of concern relating to more traditional sources of human insecurity. As in other peripheral countries, the root cause is inequality which, in the case of Brazil, is particularly severe. All classes of society experience deep feelings of insecurity. The poorest feel insecure because their basic needs are not met, with millions going hungry every day and even more living in substandard dwellings lacking drinking water and sanitation infrastructure. The middle class is heavily indebted and lives in economic insecurity. Even the well-off feel insecure, as they may become targets of crime.

In this situation, when nobody feels safe, people question the effectiveness of the institutions that were created to ensure a peaceful social environment. Parliament, the justice system and political parties are all perceived to work for their own sake rather than the public good. The democratic system itself is under question and even well-intentioned public figures are met with skepticism. Some disturbing developments arising from this situation are the rise in crime and fraudulent activities, the increase in drug dependence, the ascent of cults, and the return of populism.

Clearly, institutions need to be strengthened, but it is unclear how this could be achieved.

Author’s Contact Information
Email: neantro@sk.tsukuba.ac.jp

References
2. Frank H. Knight, Risk, Uncertainty and Profit (Boston: Schaffner & Marx, Boston, 1921)
The survival of humanity requires a paradigm shift to an ecosystem-like organization.

– Dimitar Tchurovsky
Global Leadership or Self-Governance: The Basic Laws of Governance

Our economies and corporations are sub-systems of life rather than supersystems that transcend life.

– Jay Bragdon, On Crossing the Threshold Towards a Regenerative Economy

Education has to enhance individual and collective freedom, develop existing potentials of cooperative behavior.

– Erich Hoedl, Reintegration of Capitals & Emerging Global Governance

To combat inequality, it is important to find ways to offer universal access to services needed to build the human capital of young individuals.

– Neantro Saavedra-Rivano, What to do about the Persistence of Inequality?

We continue to make the fatal error of thinking of society and of organizations as though they were machines (another mechanistic metaphor) rather than organisms.

– Piero Dominici, Hard Times: The Thinking Crisis in the No-Knowledge Society

The paradigms and models have failed to be predictable because our models for managing our futures have been completely unrealistic.

– Sesh Velamoor, Future as Emergence: Paradigms, Patterns and Processes

A new perspective on leadership and decision-making based on the complexity of science appears to be the most fundamental requisite of today.

– Elif Çepni, Oya Önalan, Canan Yıldırán & Gökhan Oruç Önalan, A Scale Development for Volatile-Uncertain-Complex-Ambiguous (VUCA) World Management

The worst threats to humanity are no longer ‘natural’ ones; they are caused by us.

– Michael Marien, Report on Recent Reports #6, Winter 2023-2024

Artificial intelligence as it exists today looks to the past, not the future.

– Saulo José Casali Bahia, Human Security and Democracy: What’s next for Brazil

Fundamental perspectives must attempt to link security, technology and development agendas. It is necessary to integrate economic, social and environmental conditions.

– Joanilio Rodolfo Teixeira, Human Security and Socio-economic Agenda: Need for Refinement and Action

The environment is not an entity external to socioeconomic activities.

– Danielle Sandi Pinheiro, Revisiting the Power Triangle

The current global trajectory is unsustainable. The “business as usual” scenario, in addition to being undesirable, is simply unfeasible.

– Gilberto C. Gallopín, Uncertainty: The New Situation

Uncertainty and human insecurity have been, throughout history, not only the underlying condition but also the engine for what we call progress.

– Neantro Saavedra-Rivano, The Roots of Human Insecurity
Values form the bedrock upon which everything else rests—the fertile soil where SDGs take root and flourish.

– Ranjani Ravi, Human Security – Bedrock of the SDGs

We appeal, as human beings, to human beings: Remember your humanity, and forget the rest. (Russel-Einstein Manifesto, 1955).

– Ivo Šlaus & Aleksander Zidanšek, Stop All Wars Now

The present challenges facing multilateralism stem from a crisis of trust, both between nations and among people towards their leaders and international institutions.

– Donato Kiniger Passigli, Time for a Peace Offensive

Human security is a conceptual framework that integrates daily life considerations of all people with global governance concerns.

– Jonathan Granoff, Multiplicity: Threats, Partnerships, and Stories of Success

Apply the highest ethical standards for safe and benevolent AGI through bias mitigation, trustworthy data, and inclusive decision-making so that AGI can be applied to help solve the greatest challenges of our time.

– Anneloes Smitsman, Ben Goertzel, Mariana Bozesan & Laura George, Participatory Framework for Creating a Global AGI Constitution

Everyone wants the most murderous form of AI, the deadliest biotech or other weaponizable technology under their control.

– Thomas Reuter, The Crisis of Containment

– Time for a New Approach?

University education needs to shift the focus from assured knowledge of the past to mental preparation for a rapidly changing world.

– Ashok Natarajan, Principles of Social Development

Catalyzing transformation as a change framework is that it is a new approach to organizing existing and emerging initiatives for transformative impact.

– Sandra Waddock, Catalyzing Transformation: A Process Framework for Transformative System Change

Behind any machine there is always a person (individual or collective) who created it, for a well-defined purpose. It is behind the machine that we must look.

– João Caraça, The Ubiquity of Machines: Will Machines Overcome Human Beings?

Continued…