



PROMOTING LEADERSHIP IN THOUGHT
THAT LEADS TO ACTION

THE WEALTH OF NATIONS REVISITED

CADMUS

NEW PERSPECTIVES ON MAJOR GLOBAL ISSUES

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The CADMUS Journal

The acronym of the South-East European Division of The World Academy of Art and Science – SEED – prompted us to initiate a journal devoted to seed ideas – to leadership in thought that leads to action. Cadmus (or Kadmos in Greek and Phoenician mythology) was a son of King Agenor and Queen Telephassa of Tyre, and brother of Cilix, Phoenix and Europa. Cadmus is credited with introducing the original alphabet – the Phoenician alphabet, with “the invention” of agriculture, and with founding the city of Thebes. His marriage to Harmonia represents the symbolic coupling of Eastern learning and Western love of beauty. The youngest son of Cadmus and Harmonia is Illyrius. The city of Zagreb, which is the formal seat of SEED, was once a part of Illyria, a region including what is today referred to as the Western Balkans and even more. Cadmus will be a journal for fresh thinking and new perspectives that integrates knowledge from all fields of science, arts and humanities to address real-life issues, inform policy and decision-making, and enhance our collective response to the challenges and opportunities facing the world today.

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THE WEALTH OF NATIONS REVISITED

CADMUS

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CADMUS 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. Today we face myriad challenges. Unprecedented material and technological achievements co-exist with unconscionable and in some cases increasing poverty, inequality and injustice. Advances in science have unleashed remarkable powers, yet these very powers as presently wielded threaten to undermine the very future of our planet. Rapidly rising expectations have increased frustrations and tensions that threaten the fabric of global society. Prosperity itself has become a source of instability and destruction when wantonly pursued without organizational safeguards for our collective well-being. No longer able to afford the luxury of competition and strife based primarily on national, ethnic or religious interests and prejudices, we need urgently to acquire the knowledge and fashion the institutions required for free, fair and effective global governance.

In recent centuries the world has been propelled by the battle cry of revolutionary ideas — freedom, equality, fraternity, universal education, workers of the world unite. Past revolutions have always brought vast upheaval and destruction in their wake, tumultuous and violent change that has torn societies asunder and precipitated devastating wars. Today the world 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.

Until recently, 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. Over the past half century, the role of pioneering individuals is increasingly being replaced by that of new and progressive organizations, including the international organizations of the UN system and NGOs such as the Club of Rome, Pugwash and the International Physicians for the Prevention of Nuclear War. These organizations stand out because they are inspired by high values and committed to the achievement of practical, but far-reaching goals. This was, no doubt, the intention of the founders of the World Academy of Art & Science when it established this institution in 1960 as a transnational association to explore the major concerns of humanity in a non-governmental context.

The founders of WAAS were motivated by a deep emotional commitment and sense of responsibility to work for the betterment of all humankind. Their overriding conviction was on the need for a united global effort to control the forces of science and technology and govern the peaceful evolution of human society. Inhibiting conditions limited their ability to translate these powerful motives into action, but they still retain their original power for realization. Today circumstances are more conducive, the international environment is more developed. 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.

Ivo Šlaus

Orio Giarini

Garry Jacobs

CADMUS
New Perspectives on Major Global Issues
Volume 2, Issue 4, May 2015

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Inside this Issue

The World Academy of Art & Science has conducted fifteen conferences over the past three years exploring various dimensions of a human-centered development paradigm intended to address the multi-dimensional challenges confronting humanity today. This project is based on the premise that incremental improvements in institutions and policies are insufficient to cope with the increasingly globalized, rapidly changing, interconnected and complex evolution of the human community now in process.

The world we presently live in is a reflection of implicit beliefs, values and ways of thinking that confine us to a narrow orbit of options and prevent us from seeing the immense creative potentials unleashed by social evolution. The articles in this issue of *Cadmus* examine ideas presented at recent WAAS conferences in Almaty (Nov '14), Podgorica and Dubrovnik (Mar '15), Kiev and Baku (Apr '15) on the political, economic, social, educational, cultural, ecological, psychological and spiritual dimensions of a new paradigm, the intellectual processes on which it can be founded, and their practical application at the level of institutions and public policy.

As the great discoveries in Physics radically altered our conception of the material universe a century ago, the further we delve into the complexity of these dimensions, the greater the conviction that emerges that a concerted effort to alter the intellectual foundations of global society is both necessary and feasible. These articles not only reflect an increasing level of concern over the current dithering and continental drift that are magnifying our problems by inaction, but also a growing awareness of untold opportunities that a new paradigm can unleash.

The world is in dire need of new leadership at the level of ideas, institutions and action. This issue also reports on a new WAAS project to develop a transdisciplinary course on transformational leadership designed to better equip the next generation with the capacity to see beyond the perceptual barriers that confine and limit human development, to reconcile the apparent contradictions that stymie progress at multiple points, to transform challenges into opportunities, and to unleash the enormous potential of humanity's individual and cultural diversity.

We hope you enjoy this issue.

The Editors

Ten Points on New Paradigms*

Kassym-Jomart Tokayev

Chairman of the Senate of Kazakhstan;
Fellow, World Academy of Art & Science

Contemporary challenges create the need for a new paradigm of global development. This is why Kazakhstan wants to tackle this problem. President Nursultan Nazarbayev launched the G-Global initiative that aims at uniting efforts of the international community to establish just and secure world order.

This initiative offers an absolutely new form of global discussion. There is no doubt about the accomplishments of the elite G8 and G20 groups. We believe that the world should listen to the views of other countries and hear their proposals on current development. In our opinion such redistribution of global roles is more consistent with the principles of democracy, inclusive responsibility, and pays due regard to the needs of a multipolar world.

The G-Global project envisages open dialogue of the community of nations willing to make a worthy input for the promotion of stability and sustainable development of humankind. This means that the principles of equality and mutual respect must prevail in international relations.

It is our firm belief that while overcoming the Cold War stereotypes, we can steer the economy out of the vicious cycle of crises and recessions by fostering trust based on global interaction and enhancing multilateral cooperation.

The main principles of the world order in the 21st century set out in the G-Global initiative will build a solid foundation for a cohesive, multipolar world.

Expectations that the world would become a safer place to live in at the end of the Cold War have melted away. The world community is jam-packed with new threats to global security whereas international relations are strained to the point that reasonable concerns about the return to the Cold War have emerged.

The 21st century is yet again witnessing political and economic instability, regional conflicts, extremism, terrorism and organized crime. The world is still jeopardized by the proliferation of weapons of mass destruction and the resumption of high-tech arms race. Social and demographic problems are significantly growing in number: widening gap between rich and poor countries, rising migration flows, overpopulation on Earth, pandemic diseases, mounting hunger and fresh water shortage. Morals and ethics are eroding; globalization is amplifying the risk of ideological, cultural and religious conflicts. Anthropogenic

* Keynote address at Conference on New Paradigm of Sustainable Human Development: G-Global – a new form of global dialogue, Al-Farabi Kazakh National University, Almaty, Kazakhstan, November 5-7, 2014

action has brought humankind to the line beyond which future existence of the human race may become questionable.

In view of these pressing challenges we should ponder over a paradigm shift to ensure sustainable human development and security.

First, it is necessary to adjust priorities concerning the very essence of economic activity. **The ultimate goal of economic development is not only and not so much achieving quantitative growth but also tackling issues related to the quality of life, that is science, health, education and culture.** Sustainable economic growth should be measured by technological efficiency and safety, high quality of goods and services, sound consumption standards and a resource friendly approach.

GDP per capita is not the only economic indicator of success. **Wealth distribution, social wellbeing, compliance with international living standards, the rule of law and respect for human rights and freedoms should also be taken into account.**

Second, it is essential to reassess environmental factors in a new paradigm of sustainable development.

60% of life-critical ecosystems on Earth are under the threat of destruction. Global warming caused by greenhouse effect resulting from anthropogenic activity may lead to universal catastrophes. Since 1980 the number of natural disasters has increased fivefold. Over the past 15 years overall damage has reached USD 100 billion.

Attempts to achieve economic growth by increasing natural resource consumption are eventually a dead end. **Mankind uses natural resources 50% faster than they are renewed.**

Environmental preservation and reproduction should be a prerequisite for sustainable human development.

Third, human capital plays a crucial role in sustainable development. Its potential depends on the quality of education, healthcare and social well-being.

In this regard the United Nations' Millennium Development Goals are extremely important. The MDGs have helped many countries, including Kazakhstan, to improve their quality indicators of development. Although not all goals would be achieved by 2015, the experience gained worldwide is indispensable to future sustainable human development. The Millennium Development Goals Plus will be built on this experience.

Fourth, the widening **gap between the rich and poor** poses a major challenge to sustainable development and undermines global stability.

According to *Oxfam International*, the 85 richest people on the planet own USD 1.7 trillion, the wealth of half of the world's population or the 3.6 billion poorest people.

The contrast between multibillionaires and people living on USD 1 a day or even less is a source of despair, hatred and radicalization in the latter group. Social stratification gives rise to public protests and may hinder world economic growth.

Corruption corroding morality and undermining domestic security only aggravates social inequality. According to the Tax Justice Network, crooked business people working with corrupt officials have embezzled USD 30 trillion over the last 15 years – or 40% of the world’s Gross Domestic Product. Between 2000 and 2011 USD 1.2 trillion ran from the European Union to secret offshore financial havens, while USD 4 trillion disappeared from China and USD 1 trillion from Russia.

The new concept of sustainable human development should outline measures to overcome this situation by bridging social inequality gaps at the global level.

Fifth, social inequality is deepening with the growth of world population which has reached 7.2 billion people and by 2100 will increase to 12.5 billion. Nowadays over 80% of the world’s population does not have enough food, jobs and appropriate living conditions.

Demographic growth provokes the threat of hunger that in turn requires a more rational use of agricultural resources.

The UN estimates that roughly one-third of the edible parts of food produced for human consumption gets lost or wasted globally, which is about 1.3 billion ton per year. It is an unaffordable luxury undermining global stability as almost one billion people on the planet are starving.

The **unemployment problem** has worsened with technological progress. According to the UN, in 2014 the number of unemployed climbed to more than 200 million people worldwide; the number of working people earning less than USD 2 a day has grown to 840 million people. Young people are increasingly confronting unemployment problems; nearly 75 million people under the age of 24 years are unemployed. People looking for a job often have to migrate to other countries and the number of these persons is close to 235 million.

We also focus on the **shortage of drinking water**. The UN estimates that currently 750 million people lack access to safe drinking water. Acute water shortage inflamed 37 interstate conflicts over the past 50 years. According to estimates, by 2030 water scarcity will deteriorate to the extent that social instability and armed conflicts may be sparked in some parts of the world. This problem is also relevant to our region.

Therefore, **great attention must be paid to developing and poor countries provided that they will make efforts to embark on the path to sustainable development including economic reforms and transformation of political institutions.**

Sixth, new approaches should be applied to the balance between national culture and universal values. Changes in the global way of thinking should take into consideration the diminishing Eurocentric influence and strengthening “non-Western” views. Asian cultural values became popular due to the rapid economic rise of Asia. **The concept of a new world order should reflect the principles of cultural polycentricity bearing in mind the equal value of each culture to the world civilization.**

A good example of this approach is Kazakhstan’s policy to ensure interethnic and inter-faith peace and harmony underpinned by the principle of “unity in diversity”. On the initiative

of the country, the United Nations General Assembly adopted a resolution on the International Decade for the Rapprochement of Cultures (2013-2022).

Seventh, it seems necessary to reframe the paradigm of widespread competition that sets people, economies and countries against each other. **We should rely on mutually beneficial cooperation on the basis of equality, mutual respect and teamwork for the common good.** Even if this thesis may seem to be a utopian idea, the new view of competition as the engine of progress should also embrace interactive elements that will facilitate the harmonization of the modern world and reduce its turbulence.

“Our world is constantly changing, yet the UN Charter has been frozen for 69 years since its adoption.”

In this regard integral developments are extremely important. As a strong supporter of international integration efforts, Kazakhstan proposed to establish the Eurasian Economic Union that can positively influence the international situation in the vast Eurasian continent.

Eighth, the sustainable development paradigm should include the creation of a new world order in view of existing and future security threats. Against the backdrop of geopolitical shifts from a unipolar world to a multipolar one the importance of regional organizations is growing.

The Conference on Interaction and Confidence-Building Measures in Asia initiated by Kazakhstan has become a tangible factor in global politics. The Shanghai Cooperation Organization plays a positive role in this initiative. The Collective Security Treaty Organization is gaining strength. Active involvement in these organizations aimed at strengthening their potential is in the national interest of our country.

We should be ready to upgrade a number of outdated provisions of the UN Charter while unconditionally maintaining the basic principles of international law. The fear of opening Pandora’s Box must give way to understanding and considering the new realities. Our world is constantly changing, yet the Charter has been frozen for 69 years since its adoption. At the same time we cannot cast doubt on the fact that the United Nations is indispensable as a universal organization.

One of the major concerns is the slowdown in negotiations in main areas of disarmament be it cutting off the production of fissile materials, negative guarantees, preventing arms race in outer space, or general and complete disarmament. New threats and challenges should not overshadow disarmament problems. This is crucial to Kazakhstan which holds the leading position in this area, having closed down the nuclear test site on its territory and renounced its status as the world’s fourth largest nuclear arsenal.

Ninth, the new security paradigm should answer these questions: how to deal with terrorism and extremism, how to prevent the threat of civilizational faults and how to reduce the conflict potential in global politics.

The problem of **religious extremism** that puts international security in jeopardy is very acute. Jihadists aiming at establishing a global “Caliphate” clearly demonstrate the size of this peril. With available military equipment and funding, jihadists are making attempts to acquire weapons of mass destruction. These facts highlight the need to strengthen the nuclear nonproliferation regime and to eliminate arsenals of chemical and bacteriological weapons as fast as possible.

The fight against extremism and terrorism must imply international military cooperation and preventive social measures. The growing popularity of jihadist ideas to establish a kind of “Islamic state” on the territory of a number of regions makes it evident that the ideology of militant intolerance resonates with young people in many countries. It is necessary to counter this “fire and sword” ideology with **education and tangible steps to restore social justice, eradicate poverty and strengthen confidence in a decent future.**

It is vital to **struggle against separatism** which manifests in armed clashes and terrorist attacks. In terms of legal framework we should eliminate fundamental contradictions between the right of nations to self-determination and the principle of territorial integrity enshrined in the UN Charter. The world is mostly self-determined, therefore the priority should be given to the territorial integrity of states.

There is a need for eliminating the causes of separatism. No room should be left for ambiguity and double standards. Border delimitation treaties must be strictly adhered to. All countries should respect the constitutional order of other nations, especially neighboring ones and cooperate with them for the benefit of peace and security.

Tenth, sustainable development implies domestic stability. As history has shown, democracy has been a guarantee of stability. Yet, **democratization is an evolutionary trend that can neither be artificially stepped up nor imposed.** Historical experience, cultural traditions and national mentality of every country need to be taken into account. The recent developments in Afghanistan, Iraq, Libya and Egypt demonstrated that a very well-thought-out approach, tolerance and political tact should be displayed in building democracy.

Many issues of sustainable development ought to be addressed both at the national and global levels. Unfortunately, we have not started witnessing this yet. Due to economic crises some countries are facing serious difficulties in the implementation of relevant programs. The UN Security Council is split by discord, impeding the ability of this vital UN body to deal with the most pressing issues of contemporaneity. This was the case with Syria. The Ukrainian crisis led to deteriorating international situation and sanctions standoff which damaged economies not even involved in the conflict. The interests of countries are infringed, but what is more important is that the life of the middle class which is the pillar of democracy is getting worse.

“Democratization is an evolutionary trend that can neither be artificially stepped up nor imposed.”

Being a part of the international community, Kazakhstan is interested in strengthening international cooperation to address global sustainable development. President Nursultan Nazarbayev outlined the country's vision of long-term development in the Kazakhstan-2050 strategy.*

The G-Global Initiative†

Nursultan Nazarbayev
President of Kazakhstan

The 21st century has given rise to numerous challenges to economy, environment, geopolitics, natural resources and energy. The interdependence of political, financial and economic systems has resulted in the implications of local problems and actions of any country regardless of its size. Deep qualitative changes in the world development paradigm are needed to overcome these challenges.

Against this backdrop, Kazakhstan's G-Global initiative is undoubtedly crucial. We have established a unique communication platform that generates new ideas and solutions. This project has been successfully implemented both at the regional and international levels. It has powerful intellectual potential of talented young people and representatives from the public and business sectors.

As a platform for international discussions, G-Global has been promoting innovative ways of efficient management and fostering harmonious and dynamic balance between people, resources and the environment. Our goal is to refine all major activities of humankind and to change the mentality of people.

* See "Address by the President of the Republic of Kazakhstan, Leader of the nation" <http://www.consolatokazakhstan.venezia.it/wp-content/uploads/2012/12/Poslanie-English.pdf>

† Message delivered by Chairman Tokayev to participants of the Conference on New Paradigm of Sustainable Human Development G-Global – a new form of global dialogue, Al-Farabi Kazakh National University, Almaty, Kazakhstan, November 5-7, 2014.

A New Beginning*

Federico Mayor

Chairman, Foundation for a Culture of Peace;
Fellow, World Academy of Art & Science

“I pretended not to know. / And now / my conscience / is without rest / night and day”.

Abstract

In the last few years, there has been an enormous decline on all fronts and in all areas. The world, Europe and Spain undoubtedly suffer its effects. Our political leaders have surrendered to the rules of the markets and obediently subjected our society to “austericide”, with profound negative social effects. The present economic guidelines don’t work and there is no end in sight to the widening inequalities originated by budget cuts.

Although it will require much effort, changing course is possible for the first time in history: in a short period of time human beings are experiencing an unprecedented transition from invisible to visible, from anonymous spectators to identifiable protagonists.

At present, thanks to modern communication and information technologies, the urban era is fast becoming the digital era. “We, the peoples...”, as the United Nations Charter so lucidly commences, may now become a reality for those who at last can take in their hands the reins of their common destiny.

It is intolerable that the values of the stock market have replaced ethical values. It is time to oppose neoliberalism and reestablish social justice, to eliminate groups of oligarchs (G-6, G-7, G-8... G-20) and re-found a strong United Nations System.

In the last few decades, women, with their inherent faculties, are rapidly increasing their role in decision-making. “The peoples” can express themselves freely and participate, with global consciousness, in building a culture of peace and non-violence worldwide.

The time of silence and submission is over.

A “new beginning” can now take place.

It’s true that in the last few years there has been an enormous decline on all fronts and in all areas. The world, including and not restricted to Europe and Spain, undoubtedly suffers from its effects. Our political leaders have surrendered to the rules of the markets and obediently subjected our society to “austericide” (economic self-destruction). It is irrelevant that their formulas don’t work and that there’s no end in sight to their budget cuts. Spaniards are

*Already published in the book *REACCIONADOS* Editorial (Madrid: Aguilar, 2015)

now “cheaper” than a majority of Europeans. With the worsening of our standard of living we have become (paradoxically) more submissive, accepting whatever is imposed on us. But not all of us are compliant; a new type of citizen power is emerging. It is so strong that it provokes much fear among members of the “establishment.” Perfectly aware of what this means, they are attempting to stop this trend by any and all means at their disposal.

And the fact is that the changes are significant. Real possibilities are opening up. It is time for a federation, a relationship between states, nations and communities, to weave a new tapestry of a reconciled mankind that lives in harmony and fraternally faces the great challenges of a future that may still be bright. But this will require taking measures with much foresight and moral integrity.

A federation in Europe and Spain and genuine democracy in particular are in contrast to the current system that has reached abominable limits, especially since the mid-1990s. Many facts are coming to light that justify citizens’ discontent and their total lack of confidence in political leaders. Social measures and those that encourage endogenous talent and capabilities such as the Dependent Persons Act or support for R&D and innovation and cooperation have quickly been replaced with austerity measures decreed by the markets, while we bewilderedly observe how our Gross Domestic Product has increased by 0.85% with the addition of income from prostitution and drug trafficking. And many of the Members of Parliament mechanically offer their applause, being incapable of expressing dissent for rigid decisions taken by political forces shielded by an absolute majority, which prevents any new ideas or tendencies from taking hold.

And what is worse, and what will directly impact this future that requires and is already requiring a different frame of mind and attitudes toward others, is an educational system that is solely modeled from reports by economic institutions while it continues to ignore experience, the immense and unexplored treasure of thousands of national and international educators, teachers and scholars.

Changing course is possible, although it will require much effort. More is lost when we are swept along by the currents, by those that make so much effort to work against us, against the common good of all citizens. But there are reasons to believe that something is definitely changing. In a short period of time there has been an unprecedented transition from invisibility to visibility, from humans being anonymous spectators to becoming identifiable protagonists. A new beginning is now viable.

1. Global Conscience

Physically and intellectually confined in very limited spaces for centuries, human beings were invisible, silent, obedient and fearful. They lived in such a restricted world that they barely knew what happened just twenty kilometers from their homes. Later, at the end of the 19th century, the transformation to an “industrial” civilization, very different from a rural society, prompted the migration of large populations to urban centers. At present, thanks to modern communication and information technologies, the urban era is fast becoming the digital era. Indeed, we are currently immersed in a process of “internetization”, so aptly

defined by John Palfrey in his article “The Web at 25: Looking Ahead to What Might Be”. In a very short timeframe we have reached a significant turning point that has progressively enabled many people to be able to express themselves, to know what is taking place around the globe in real time, and to have access to the lessons of yesterday and to the great issues and challenges of the world today.

“Inertia is a great obstacle to evolution. The only thing that separates “evolution” from “revolution” is an “r”, the “r” of responsibility.”

All means are being used to delay the emergence of this new citizen power in decision-making centers that to-date has been exclusively male dominated. “We, the peoples...”, as the United Nations Charter so lucidly commences, may now become a reality for those who at last can take in their hands the reins of their common destiny.

Since 1945, after President Roosevelt’s magnificent design of democratic multilateralism, “the peoples” have gradually been replaced exclusively by States, some of which have also replaced votes with vetoes, thus neutralizing the democratic nature of the United Nations system. Later, when international cooperation and global development led by the wealthier nations appeared to be the perfect solution for resolving the inequalities, insults to the human condition and countless military conflicts and confrontations, the “democratic principles” so carefully set forth in the UNESCO Constitution were replaced with the values of the marketplace and the United Nations with groups of plutocrats who, as was to be expected, have proven to be totally inept at managing problems at the global level.

They are now seeking to stop the emergence of citizen power, since digital technology is rapidly and progressively enabling not only instantaneous global intercommunication, but also makes expression of thoughts and feelings possible. This rapidly ensuing turning point is issuing in a new era of global coexistence, of accepting our immense cultural diversity and of recognizing the equal dignity of all human beings which is the cornerstone of Human Rights.

In an attempt to halt this force of renewal, the powers that control society seek to impose uniformity and distract us by broadcasting biased newscasts that distort our capacity to clearly discern what is happening, thus increasing our dissatisfaction with institutions that should be playing a fundamental role in the great transition which has now commenced, while many of the communications media — “their master’s voice”— unduly and fraudulently manipulate the information they disseminate.

Professor María Novo* has rightly said that the greatest problem of our time is “TDU” (“they’re distracting us”). Obsessive and excessive membership in sports clubs (especially

* María Novo is UNESCO Professor of Environmental Education and Sustainable Development at the UNED (Universidad Nacional de Educación a Distancia), Spain’s distance learning university

football), flooding all types of print and audiovisual media with trivial news about sports or any other topic that makes us forget the hard realities of life, presently prevents many people, who have become simple passive spectators, from working toward the true fulfillment of their responsibilities as free citizens. According to Article 1 of the UNESCO Constitution, educated people are those who are “free and responsible”, those who act upon their own reflections and never in response to the dictates of others.

Perhaps they may be able to delay the people’s “taking possession” of this new citizen power, but it won’t be long before it is “the peoples” who, endowed with a global conscience, will finally impose genuine democracy, the only context in which full compliance with Human Rights can be achieved and the urgent radical changes that are needed may be put into practice.

Inertia is a great obstacle to evolution. Instead of accepting and even promoting necessary changes while preserving timeless principles, people who cling to their privileges in the belief that nothing can beat the “good old days” seek to postpone the historic moments that lie on the horizon. I like to repeat that the only thing that separates “evolution” from “revolution” is an “r”, the “r” of responsibility.

What is indisputable is that the time for silence is over. The “outraged” — those who followed two young ninety-somethings, the Frenchman Stéphane Hessel and the Spaniard José Luis Sampedro — sent us a message from Madrid’s Puerta de Sol, a message of peaceful but determined involvement of citizens and their mobilization. It appeared to have “faded”, but a “new beginning” is germinating, in the words of the Earth Charter.

On several occasions I have described how much I was impressed by the silence of the silenced, especially on my first visit to the Soviet Union in 1961. They didn’t express themselves because they couldn’t. Later, with time, I realized that the problem doesn’t lie with the silenced, but rather with the silent. And I wrote *Crime of Silence*. Martin Luther King was right when he affirmed, “History will have to record that the greatest tragedy of this period was not the strident clamor of the bad people, but the appalling silence of the good people”. The voices so long overdue but unable to speak will now be heard; they will now ring forth to the ends of the earth... until all bonds restraining them are broken.

2. Citizen Power

Since the 15-M Movement, the Spanish, especially young people, progressively began to recognize their capacity to freely express themselves. As a part of their global conscience, the traditional powers have already known and feared that citizens’ full commitment to change is only a matter of time. The reason of force will soon begin to be replaced by the force of reason. Intellectuals, scientists, educators, artists, that is, creative people will take the lead in a great mobilization of citizens that will reestablish the democratic principles which the neo-liberals replaced with the laws of the marketplace, and the United Nations will be re-founded with the personal, financial and technical means required to rapidly establish the basis for global governance.

Civil society, now aware and capable of expressing itself, cannot tolerate even for one more minute the fact that each day thousands of persons, the majority of whom are children under five years of age, die of hunger and neglect in a genocide of immense proportions while at the same time over 3 billion dollars are invested daily in weapons and military spending. According to a recent study by *Oxfam*, 85 individuals possess more wealth than half of the world's population (3,300 million human beings), which is intolerable. It is also intolerable that "security" and "welfare" are enjoyed by fewer than 20% of the world's inhabitants, with the other 80% surviving in progressive gradients of scarcity, reaching levels of extreme poverty that threaten their very lives.

It is intolerable to continue living with the threat of nuclear war, with this sword of Damocles that darkens the horizons of our common destiny.

It is intolerable to see how the habitability of earth and conditions for life with dignity are ignored when it has been scientifically demonstrated that the conditions of our environment depend directly on human activity (Anthropocene). Mankind cannot leave the future generations a house that is "dilapidated and cold". It's intolerable that the wealthy nations fail to contribute to the development of the less wealthy ones that they are simply content to exploit.

In summary, it is intolerable that the values of the stock market have replaced ethical values to the point of shamelessly appointing governments without holding elections in Italy and Greece, the cradles of democracy, and without any reaction on the part of European countries that were subjected to the reins of absolute economic power...

The foregoing are merely examples of the notorious efforts being made to enable citizen power to commence a new era. Likewise are the efforts to prevent that from occurring. But they will be in vain. The great transition from force to words has begun.

3. Women, Cornerstones of the New Era

President Nelson Mandela, a symbol of the unexpected, a prisoner who liberated his captors, told me one evening in Pretoria in 1996 that the transition from a culture of imposition, domination, violence and war, to a culture of encounter, dialogue, conciliation, alliance and peace could not be achieved unless a large percentage of women were included in decision-making processes. When, usually for dynastic reasons, women previously achieved power, they logically imitated men, the only example they had to follow when exercising that power.

After that interview, we conducted a study at UNESCO to evaluate the participation of women in decision-making at different levels. It was not even five percent. That meant 95% of decisions were being taken by men. Fifteen years later the percentage of women's participation rate in decision-making is around 15%. It is clear that there is still much progress to be made, but it's also true that in a very few years there have been changes that hadn't occurred in centuries. There are now many fully qualified women on the edges of power, who are hopefully making it possible for the rest to reach the state foreseen by President Mandela within the next few decades.

In the buildings of tomorrow, women will be the cornerstones. Women, with their inherent respect for life, and who hesitate before resorting to force. Women who certainly don't imitate men.

In summary, we are on the verge of great transformations on a global scale.

4. Today's Impossible, Tomorrow's Possible

Global conscience, the capacity for expression, and gender balance enable us to reexamine problems that were previously thought to have no solution. Today there are many impossibles that will be possible tomorrow because a profound knowledge of reality — and thus the ability to make profound changes — and the capacity for citizen participation will enable us to live within a genuinely democratic framework. It is necessary to have a true knowledge of reality without being influenced solely by newscasts that highlight the unusual and narrate extraordinary and exceptional events. In consequence, the necessary analyses must be made to enable us to adopt the right measures *in time*. As is the case with any pathology and with natural events, any potentially irreversible phenomenon requires that measures be taken before reaching the point of no return.

“Neoliberalism has led humanity to an economy based on speculation, delocalization of production and war.”

This is another requirement that citizen power should bear in mind from this moment forward: especially when dealing with potentially irreversible matters, timely action is mandatory. *It is time for action*. It is time to ascertain exactly who is responsible for the world's present situation to preclude their continuing to exercise influence and preventing the adequate formulas for treatment from being applied.

5. Systemic Crisis. Solutions (Democracy at All Levels; Federations)

One matter that must be made very clear is the definitive demise of the neoliberal capitalist system that has been incapable of applying corrective measures when warranted. In the early 1990s I wrote, “A system that was based on equality but had forsaken freedom has collapsed, giving way to systems of public liberties in States that had previously belonged to the Soviet Union. Likewise, the alternative system based on freedom but one that has never taken into account equality must now learn the lessons that the fall of the Berlin Wall symbolizes”. But that didn't happen. On the contrary, neoliberalism has led humanity to an economy based on speculation, delocalization of production and war.

The repeated failure of attempts to achieve democratic multilateralism (the League of Nations in 1919 and the United Nations in 1945) is due to the excessive influence of the Republican Party in the United States at the national and international levels. There are other examples too: the United States is the only country that has not signed the conventions on the Rights of the Child (1989), or the International Criminal Court (1998). In 1993, the Republican Party that was already manipulating for its own use and pleasure the International

Monetary Fund and the World Bank (which had lost from its original name “for Reconstruction and Development”) directly added the World Trade Organization, placing it outside of the scope of the United Nations.

Neoliberalism is also responsible for the delocalization of production, the result of “greed and irresponsibility”, in the words of President Obama. Indeed, China, previously a great communist country, is presently a huge capitalist power and has ceased to be the “world’s factory” to become a “factory for the world”. In effect, not long ago China’s investments in R&D and innovation surpassed those of the European Union. The country’s competitive capacity has increased immensely. If we add to this the fact that the countries that should demand a minimum of compliance with Human Rights, commencing with working conditions, have excluded the possibility of applying universal jurisdiction to China, the situation becomes even more complicated.

“It is time to oppose neoliberalism and reestablish social justice; to eliminate groups of oligarchs and re-found a strong United Nations.”

The 2003 invasion of Iraq based on manipulation and lies and without the approval of the Security Council is another of the recent excesses committed by the Republican Party and it is thus essential that citizen power takes note of what its priorities should be in the near future. Such conflicts are not only the “adversaries” of the Democrats in the United States. They are the principal opponents of the other world of which we all dream.

Faced with progressive ethical, social, economic and environmental damage and the decline of humanity as a whole, the moment has undoubtedly arrived to rapidly implement profound transformations. In 1989 when everything pointed to peace, when everything pointed to change, with Presidents Mandela and Gorbachev and the culmination of the peace processes in Mozambique and El Salvador, those changes couldn’t be made because at that time citizen power didn’t yet exist.

Is Europe still a vantage point, a catalyst? Unfortunately, the markets prevailed and starting from the roof down, the European Union created a monetary union without previously creating an economic and, above all, a political union. This “Europe”, deprived of its ethical foundations — so beautifully expressed, I may add, in its 2000 Charter of Fundamental Rights — has progressively deteriorated into its present state of confusion. Action must be taken quickly. So many wrong turns, so many adverse tendencies must be rapidly reversed.

It is clear that the force of Europe is not a Europe of force, but a Europe of Human Rights, democratic multilateralism, principles, international cooperation, cultural diversity and prospective vision.

Instead of serving as a watchtower and a symbol of pluralism and public liberties, instead of symbolizing for the world the dignity of all human beings (proclaimed at the beginning of the EU Charter of Fundamental Rights), the European Union has become the Europe of markets, of extremists (Le Pen at the forefront in France, of what should have never been),

of xenophobes, nationalists and secessionists. And when what was most needed was citizens of the world, the projection from Europe of a new international order, a rapprochement between Ukraine and Russia (instead of pushing Ukraine further to the east), building solid bridges with Turkey. The markets have invaded everything.

It is time to oppose neoliberalism and reestablish social justice; to eliminate groups of oligarchs and re-found a strong United Nations, with weighted votes but without vetoes, with a General Assembly electing 50% of its representatives from civil society and with both an Environmental and a Socio-economic Security Council in addition to its present one. The time has come to govern globalization at the dawn of the digital era. The time has come to stop the “ecocide” and fulfill our duties to future generations.

It’s time to fully integrate India and China within the institutions of the United Nations, ready to face truly complex situations but supported, for the first time in history, by this “popular outcry” that should and can establish, from the bottom to the top, the course of these new times.

It is clear that rapid decisive changes are required. In the areas mentioned, federation, relations between States, nations and communities. Guided by the overall perspective gleaned from the vantage point of UNESCO over several years, in my blog, articles in the press, conferences and contributions in various publications I have insisted on drawing attention to the *conceptual changes that are so essential and so urgent* for achieving democracy at the international, regional, national and personal levels. I don’t believe there is any other alternative: democracy vs. the dictatorship of economic power and the concentration of all types of resources and power in a very few hands. I have already mentioned the “great dominion”. The only alternative, which had already been offered in 1945, is “the peoples”. “We, the peoples have resolved to save the succeeding generations from the scourge of war”...

This is the solution: the peoples, building peace, the future generations. Rapidly converting the immense excessive amounts invested daily in military spending into the resources needed to build peace, safeguard the environment and achieve global sustainable and human development. Now is the time to combine our efforts and join our arms and hands in favor of a rapid transition from an economy based on force, imposition and the dominance of a few to an economy of global development. That great turning point to which I have already referred, from force to words.

In the words of Amin Maalouf,* “Unprecedented situations require unprecedented solutions”. I believe we should bear this in mind when preparing our roadmaps for the future.

“Unprecedented situations require unprecedented solutions.”

– Amin Maalouf

6. New Points of Reference and Meanings

- *Employment and jobs.* In the digital era work should be the protagonist, along with

*Amin Maalouf is a Lebanese writer who writes in French and is a 2010 recipient of The Prince of Asturias Award for Letters.

personal dedication and productive activities, vs. the immense possibilities afforded by automation and robotics. This alters present concepts of working hours and traditional employment, making working schedules, forms and activities more flexible, which will also allow full incorporation of women into the workforce without the barriers that still exist in that regard.

- Distinction between *information* and *knowledge*. Between knowledge and wisdom. We are inundated with information, but it is essential to allot time for reflection, to absorb the knowledge that will result in innovation, in inventions. “Research,” said Professor Hans Krebs, * “is observing what others observe and to think what nobody has thought”. The distinctive capacity of each human being, that creative power, must from now on be used progressively to draw a new world design. One that distinguishes between knowledge and wisdom, one that distinguishes the *who* from the *how*...
- *Longevity*, one of the pillars of the future that has yet to be written, is a fundamental aspect of this new design. As mentioned previously, today we have the immense benefit of experience that was often lost too soon before. In the words of an African proverb, “when an old man dies, a library is burned.”
- *The educated*, those who are “free and responsible”. We must take into account this view of the educational process, a process that lasts a lifetime, when designing the future that, at the dawning of this new century and millennium, is now finally within the scope of citizen action.
- *Learning the lessons of the “emerging nations”*. In 1997 I wrote, “Sap rises from the South”. For centuries Latin America and Africa have first depended on and later looked permanently toward Europe, toward the West. We should all now learn from the lessons, initiatives and ways of countries that have rebelled against the exclusively mercantile models imposed on them and from which they are now progressively being freed.
- *It is still today*. It is essential to take action to avoid reaching what in many cases may become an irreversible situation, or at least to lessen their effects with the appropriate measures. *Tomorrow is Always Late* was the title I chose for one of my books in 1988. I must insist that now is the time for action because the majority of the diagnoses have already been made and it is presently urgent to apply the appropriate treatments. And to do so in time.
- *The feasible and the admissible*. Knowledge is always positive but how it is applied may not be. It may even be perverse. Thus it is necessary to know how to distinguish knowledge, which is always liberating, from erroneous ways in which it is applied.

Our greatest hope is the distinctive capacity of the human race that enables us to devise, invent and to think outside the box, in unexpected ways. The unexpected is our hope.

* German biochemist and winner of the 1953 Nobel Prize in Physiology or Medicine.

7. Urgent Radical Changes

“I’m writing from a shipwreck... / for what we have destroyed / especially in ourselves... / ... but I’m also writing from life, / I’m writing of a world to come”.

– José Ángel Valente

In 2000 in my book *Un mundo nuevo* I published four great contracts that, in my opinion, are capable of putting us back on course at the dawning of this new century and millennium. They include: a new social contract, a new environmental contract, a new cultural contract and a new ethical contract. Only by making fundamental values, democratic principles and essential ethical values the focus of our daily behavior will we be able to bring together the infinite diversity — to achieve the uniqueness — that characterizes all human beings. For that reason they are considered “*universal values*”. This is the only way for achieving the beginning of a new era and peaceful and prosperous coexistence.

Based on experience, on decades-long reflections during my lifetime, and based on the problems that the present situation poses, I am proposing remedies that must be applied urgently at the international, regional, national and local levels.

8. At the Global Level

- Dissolution of plutocratic groups and reestablishment (establishment) of an effective multilateral system.
- Reform of the United Nations, with the participation and representation set forth above, to provide it with the moral and functional authority that is so essential today.
- Putting an end to systemic crisis prompted by the Republicans in the United States who replaced democratic principles (justice, equality, freedom, solidarity) with the laws of the marketplace and multilateralism with groups of plutocrats, and whose resounding failure in their attempt to likewise replace the United Nations is there for all to see.
- Rapidly reduce the risk of reaching points of no return in environmental degradation resulting from human activity (Anthropocene), by adopting throughout the world and without exception or delay the measures that our responsibility toward future generations demands.
- Nuclear disarmament: This is extremely urgent and a great popular mobilization in cyberspace should foster the end of this terrible “Sword of Damocles”.
- An end to the supranational trafficking by mafias: trafficking in arms, drugs, people... Regulation of the sale and consumption of drugs whose extremely high price nevertheless is never a deterrent to use and, as is the case with alcohol and tobacco, in the future considering drug use which is essentially a health and not only a security problem.
- Restructuring of economic systems, establishing global regulating mechanisms, elimination of tax havens without exception, and the transition from an economy of

speculation, delocalization of production and war to an economy of global sustainable development that would put an end to the exploitation, social inequalities, extreme poverty, death from starvation that cast a shadow over the dignity of the human species as a whole.

- Promote the effective and efficient functioning of “regional associations” such as the European Union, CELAC, OUA to thus facilitate world governance.

9. At the European Level

- Reform of the EU Treaties, strengthening the economic and political unions that were not defined prior to the monetary union.
- If less than 60% of the electorate in a given country votes in the European Parliamentary elections, those elected should not be allowed to take their seats in the European Parliament.
- Autonomy in security matters, withdrawing from NATO whose existence is no longer justified after the disbanding of the Warsaw Pact and costs Europe immense amount of money, also ceasing to acquire unnecessary and outdated military equipment.
- Balanced industrial relocation.
- Incentives for R&D and innovation.
- Reasonable postponement of deadlines for reducing the deficit and regulation of financial flows.
- Repositioning of democratic principles to guide the EU’s actions, promoting cultural, ethnic, ideological and religious pluralism as the basis for peaceful coexistence, placing social justice at the center of Community policies, and always safeguarding the necessary means for education, knowledge and health. Also through the necessary incentives, jobs for all, being aware of the impact that delocalization of production, automation, robotics and new information and communications technologies have on the labor market.

Particularly urgent is genuine democracy at all levels. See the “Universal Declaration on Democracy” project that has earned the support of many prominent figures.*

10. At the National Level (Spain)

- Urgent reform of the Electoral Law to cease to maintain the present incoherent situation, the sense of representative weakness of the will of all Spaniards.
- Reform of the Constitution (particularly Chapter 8), establishing a federal system and allowing broad autonomy. The Constitution should not only be calmly updated but it should also be seen as a solution, rather than a problem, as the Magna Carta of a State

* See “Proyecto Declaración Universal De La Democracia” http://www.fund-culturadepaz.org/democracia_esp.php

encompassing all Spaniards and with extensive powers of self-government and well-established and generally-accepted common principles.

- Independence of the executive, legislative and judicial powers, establishing the necessary corrective mechanisms to safeguard the role of minorities and civil society in the event of an absolute parliamentary majority, and with impeccable respect for democratic processes.
- Support for education, health and R&D and innovation as matters which should be placed above politics and which are presently being subjected to possibly irreversible budget cuts.
- Judicious relocalization of foreign production.
- Implementation of a project to promote tourism and residence in Spain, taking advantage of longevity and the unequaled human, cultural, climatic, natural and gastronomic features that the Peninsula and its two island chains have to offer.
- Promoting renewable energies.
- Speedy and severe measures to penalize taxpayers' lack of solidarity and tax evasion.
- Initiatives to promote self-employment and SMEs.
- Given its special past history, mobilization of Spain's capacity as a bridge with Africa, the Arab countries and certainly, with Latin America.

These are some of the proposals that the majority of the world's citizens must decidedly support, particularly those that involve personal behavior and world governance. In all cases they should be implemented democratically, listening to the voices of the people who now for the first time in history are able to freely express themselves.

As explained in my book *La nueva página* (1994), democracy is a culture, a way of conducting oneself. With the ethical and social collapse of the West, it is essential to re-found the United Nations to enable the excellent concepts that Roosevelt designed in 1945 to be put into practice. Only then will it be possible to achieve the global and human development sought in the 1940s. Only then will the world's priorities become the task and commitment of all. "Who, if not *all* of us?"

All of the dimensions and aspects of the economy must be subordinated to social justice, as we have firmly proclaimed in Article 11 of our draft Universal Declaration on Democracy.

11. A New Beginning

A new paradigm is needed in line with the proposals offered by Ivo Šlaus* and Garry Jacobs† of the World Academy of Art & Science. We must be very attentive to the major

* Nuclear physicist, Honorary President of the World Academy of Art & Science

† Chief Executive Officer, World Academy of Art & Science

guidelines that in a very few years should ensure the beginning of a new era, with the possibilities that derive from humanity's great transition from subjects to citizens.

"Be the change you wish to see." Following this advice from Mahatma Gandhi, we must realize that all of the many transformations that are now necessary and urgent will not be gleaned from the great powers but rather from seeds sown one by one, day after day, by individual citizens who at last realize that their destiny is actually in their own hands. Each dawning is a personal occasion for a new beginning...

As the Earth Charter's Preamble reads, "We stand at a critical moment in the Earth's history, a time when humanity must choose its future...". That's how it begins. And it ends, "As never before in history, common destiny beckons us to seek a new beginning." The Earth Charter is based on respect and care for the community of life; on integrity; on social and economic justice; on democracy, non-violence and peace, and in the end it shows us the most important steps to be taken on the road before us.

It may be one of the essential documents to inspire specific actions to enable this new beginning. A new start, in which all human beings are "free and responsible". The intellectual, scientific, academic and artistic communities, or any community with ideas, decency, heart and courage must join in and, as indicated previously, place themselves at the vanguard of the popular mobilization. *For the first time it is possible, among all of us, to invent the future.* Together we can illuminate the paths of tomorrow. As the Mayan Popol Vuh urges us, "Let us all rise, let no one be left behind".

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The 70th Anniversary of the Creation of the United Nations: Giving Peace a Chance

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Abstract

War and peace perpetually alternate. Peace is always seen as an endless project, even a dream, to be realised in brotherhood by everyone all over the earth. During the last centuries, outstanding endeavours have been undertaken by the international community to create an international order free from wars through the strengthening of mechanisms aimed at promoting peaceful settlement of disputes. The UN Charter is the most solemn pact of peace in history, which lays down the necessary basic principles for an enduring peace, such as the full respect of fundamental rights. Today, in the context of the 70th Anniversary of the creation of the United Nations, the Human Rights Council should raise the voice of victims to strongly condemn war and to openly reiterate our inalienable right to live in a context in which war and conflict are progressively eliminated on earth through the promotion of mutual understanding, tolerance, respect for human rights and peaceful relationships.

1. Introduction

In its thirty-ninth session on 12 November 1984, the General Assembly adopted the *Declaration of the Right of Peoples to Peace*. The result of the vote was 92 to none and 34 abstentions.* Twenty-nine States were absent from the vote[†] and two countries did not participate.[‡] Resolution 39/11 was sponsored by 8 States.[§]

In general terms, most of the governmental representatives[¶] who took the floor before the vote stated that the right of peoples to peace was implicitly recognised by the international community in accordance with the UN Charter. Other governmental delegations** stated that

* Australia, Austria, Belgium, Brunei Darussalam, Cameroon, Canada, Cape Verde, Denmark, Finland, France, Gabon, Germany, Federal Republic of Greece, Grenada, Guinea-Bissau, Iceland, Ireland, Italy, Japan, Luxembourg, Malawi, Netherlands, New Zealand, Niger, Norway, Philippines, Portugal, Saint Christopher and Nevis, Senegal, Spain, Sweden, Turkey, United Kingdom and United States

[†] Those absent include Iran, Israel, Morocco, Saudi Arabia and several developing countries

[‡] Albania and Malaysia

[§] Bulgaria, Cuba, Equatorial Guinea, German Democratic Republic, Lao People's Democratic Republic, Libyan Arab Jamahiriya, Mongolia and Nicaragua

[¶] Mongolia, Union of Soviet Socialist Republics, German Democratic Republic, Bulgaria, Vietnam, Hungary, Poland, Byelorussian Soviet Socialist Republic, Lao People's Democratic Republic, Czechoslovakia, Cuba, India and Malaysia

** Malaysia and Philippines.

while peace is an indispensable condition for human survival, it cannot be peace at any price. Finally, another group of countries* stressed that the right of peoples to peace has no legal basis.

The right of peoples to peace resolution contains four substantive sections: 1. The solemn proclamation that the peoples of our planet have a sacred right to peace; 2. The solemn declaration that the preservation of the right of peoples to peace and the promotion of its implementation constitute a fundamental obligation of each State; 3. The demand that the policies of States be directed towards the elimination of the threat of war, particularly nuclear war, the renunciation of the use of force in international relations and the settlement of international disputes by peaceful means on the basis of the Charter of the United Nations; 4. The supplication to all States and all international organizations to do their utmost in implementing the right of peoples to peace.

Since 2008 the Human Rights Council (hereinafter HRC) has been working on the “Promotion of the right of peoples to peace” inspired by previous resolutions on this issue approved by the General Assembly of the United Nations and the former Commission on Human Rights, particularly the General Assembly resolution 39/11 of 12 November 1984, entitled “Declaration on the Right of Peoples to Peace” and the United Nations Millennium Declaration.

On 17 June 2010, the HRC adopted resolution 14/3 on the right of peoples to peace, which explicitly requested the Advisory Committee, in consultation with Member States, civil society, academia and all relevant stakeholders, to prepare a draft declaration on the right of peoples to peace. In addition, this resolution called upon States and relevant United Nations bodies to promote the effective implementation of the Declaration and Programme of Action on a Culture of Peace.

The Advisory Committee’s text identified, in cooperation with some civil society organizations, the main elements which should be part of the future Declaration (including issues such as migrants, refugees, conscientious objection to military service, disarmament, environment, rights of victims, development and human security). The added value of the Advisory Committee’s text was to elaborate on a compilation about all linkages between the notion on peace and human rights, to mobilize civil society organizations and also to create the notion of the human right to peace by putting together all these elements in the form of a Declaration. Afterwards, Member States would make a global assessment about this text and eventually accept or reject it as a good and useful basis to continue the work on this topic.

This paper will analyse the resolutions 20/15 and 23/16 by which the Council decided firstly to establish, and secondly to extend for the first time the mandate of the Open-Ended Working Group (hereinafter OEWG) aimed at progressively negotiating a draft United Nations declaration on the right to peace. The approach of the Chairperson-Rapporteur of the OEWG, the Deputy Permanent Representative of Costa Rica to the United Nations in Geneva, will be taken into account. Resolution 27/17 by which the mandate of the OEWG

* European Community

was again extended will also be studied. Finally, the importance of consensus, the three UN pillars and the added value of the future Declaration will be analyzed.

2. Open-Ended Working Group

2.1 First Session

On 5 July 2012, the HRC adopted resolution 20/15 on “The promotion of the right to peace”. The resolution established an Open-Ended Working Group (OEWG) with the mandate of progressively negotiating a draft UN Declaration on the right to peace on the basis of the draft submitted by the Advisory Committee, and without prejudging relevant past, present and future views and proposals. The resolution was on the mandate to negotiate a text and not on the text itself, which was a different matter.

The OEWG held its first session in 2013 and following this session it concluded that there were some governmental delegations while other stakeholders that recognize the existence of the right to peace and other groups do not, arguing that peace is not a human right, but a consequence of the full implementation of all human rights.

In addition, the OEWG witnessed that the text presented by the Advisory Committee was not supported by Member States, even by those countries that actively support the process within the HRC. Cuba, Iran and Egypt pointed out that using undefined, ambiguous and un-grounded concepts that lack any consensus in international law is counter-productive and complicates the work entrusted with the working group. Controversial issues should be excluded from the text, such as human security, conscientious objection to military service, peacekeeping, refugees and migrants, among others. Some proposed sections should be discussed in other specialized fora (i.e. disarmament). Sri Lanka added that the draft Declaration has attempted to “re-invent the wheel” by formulating new concepts and definitions, whereas it should be guided by international law, basing itself on the UN Charter. Singapore also indicated that the thematic areas proposed seem to have been arbitrarily picked, as well as that the draft Declaration is philosophically and substantively problematic and is not conducive to a coherent and meaningful text.

Taking into account that the text prepared by the Advisory Committee in cooperation with some civil society organisations did not receive a general support by Member States, Indonesia stated that the last phrase of the resolution 20/15, which indicates “and without prejudging relevant past, present and future views and proposals,” opened the possibility to change it with new ideas and formulations. In addition, they added that a declaration should also be realistic, containing common denominators that are acceptable to all.

2.2 Second Session

On 13 June 2013, the HRC adopted resolution 23/16 by which the HRC requested the Chairperson-Rapporteur of the working group to prepare a new text on the basis of the discussions held during the first session of the working group and on the basis of the inter-sessional informal consultations to be held, and to present it prior to the second session of the working group for consideration and further discussion thereat.

The second session took place from 30 June to 4 July 2014 in Geneva. At the final meeting of this session, the OEWG, which is composed of representatives of States, civil society organizations and other stakeholders, acknowledged the constructive dialogue, broad participation and active engagement of governments, regional and political groups, civil society and relevant stakeholders, and took note of the input received from them and finally welcomed the approach put forward by the Chairperson-Rapporteur.*

One of the issues that the OEWG needed to consider was that during the drafting process within the Advisory Committee all the main elements identified by this UN body had previously been elaborated by Member States, international organizations and Non-Governmental Organizations (NGOs) in the Programmes of Action on Vienna and Culture of Peace. There was nothing new in the Advisory Committee's text apart from a useful compilation of those elements of international law linked to peace. Consequently, taking into account that the right of people to peace and culture of peace are different sides of the same coin, the HRC should recuperate the spirit of the resolutions 14/3 of 2010 and 17/16 of 2011, which clearly invite all stakeholders to promote the effective implementation of the Declaration and Programme of Action on a Culture of Peace.

With regard to the new text on the right to peace, it was felt that it is not necessary to re-draft a Declaration, which includes the same elements already elaborated in programmes of action previously adopted by consensus, as the Advisory Committee had made in the past. This possible exercise would be a clear duplication of efforts and energy. In addition, as clearly explained, the Advisory Committee's text was not accepted by Member States and consequently, the Chairperson-Rapporteur could not continue spinning on an approach, which had not received a general support, with the exception of some civil society organizations. It should also be noted that as of today no State has resorted to go back to the text prepared by the Advisory Committee. They prefer a short and concise text in the line of the text elaborated by the Chairperson-Rapporteur.

The Chairperson-Rapporteur decided to include in his text all the specific measures aimed at preserving the right of peoples to peace. Since 2008 the HRC has elaborated the following measures in all its resolutions: 1. The principles of the Charter of the United Nations, such as the peaceful settlement of disputes, international cooperation and the self-determination of peoples; 2. The elimination of the threat of war; 3. The three pillars of the United Nations (i.e. peace, human rights and development); 4. The eradication of poverty and promotion of sustained economic growth, sustainable development and global prosperity for all; 5. The wide diffusion and promotion of education on peace and 6. The strengthening of the Declaration and Programme of Action on a Culture of Peace.

In addition, his text was based on the relationship between the right to life and the three UN pillars, taking into account that the Declaration on the right of peoples to peace of 1984 and the subsequent resolutions adopted by the HRC recognize that "life without war serves as the primary international prerequisite for the material well-being, development and progress

* Report of the Open-ended Inter-Governmental Working Group on the Draft United Nations Declaration on the Right to Peace elaborated by Ambassador Christian Guillermet-Fernández (Chairperson-Rapporteur), Doc. A/HRC/27/63, 4 July 2014, Conclusions

of countries, and for the full implementation of the rights and fundamental human freedoms proclaimed by the United Nations”.

2.3 Third Session

On 12 September 2014, the Chairperson-Rapporteur presented his report of the second session of the OEWG before the HRC. Ireland commended the diligent approach that the Chairperson-Rapporteur had taken in seeking to find text that would allow a declaration to be adopted by consensus. They also welcomed the fresh direction taken in the new draft and hoped that the future negotiations will continue down this path.

In its resolution 27/17 of 2014, the HRC decided the OEWG would hold its third session for five working days in 2015 with the objective of finalizing the declaration. It further requested the Chairperson-Rapporteur to conduct informal consultations with Governments, regional groups and relevant stakeholders before the third session of the OEWG and to prepare a revised text on the basis of the discussions held during the first and second sessions of the OEWG.

This previous resolution is not explicitly referring to the draft declaration on the right to peace elaborated by the Advisory Committee, because this text was categorically rejected by Member States in the first session of the OEWG. This resolution is a clear example of the decision taken by the Human Rights Council to not accept the Advisory Committee’s text as a basis for future negotiations. The community of States and an increasing number of civil society organizations had realized that there was a close linkage, even sometimes the repetition, between the elements proposed by the Advisory Committee and the Programmes of Action on Vienna and a Culture of Peace. For this reason, no State claimed in the 27th session of the HRC to go back to the Advisory Committee’s text in order to avoid duplications.

As of 2013, most of the European and Western countries voted against the resolution, with the exception of Italy, Ireland and Romania, which abstained. This abstention does not mean that these countries implicitly support the notion of the right to peace, but they prefer to negotiate a balanced text which includes the positions of all Member States, those who believe in this right and others who do not support this notion.

The third session took place from 20-24 April 2015 at the Palais des Nations in Geneva. Eventually, the text should be adopted by the Human Rights Council in June 2015 and the General Assembly in September-December 2015.

Apart from recalling the measures identified by the Council for the promotion of the right of peoples to peace, the Chairperson-Rapporteur will again stress in his second text that the right to life has properly been characterized as the supreme human right, since without effective guarantee of this right, all other rights of the human being would be devoid of meaning. Since the right to life should not be narrowly interpreted, it has traditionally been linked to peace and security matters. As for the positional relationship between the right to life and peace, it appears to have been correctly stated in the Preamble to the Universal Declaration of Human Rights and the Declaration on the Preparation of Societies for Life in Peace, which recognize the inherent right to live in peace.

In preparation of the third session, on 30 January 2015, the Chairperson-Rapporteur convened an informal consultation at the Palais des Nations. The Secretariat circulated a preliminary invitation to all Permanent Missions and other stakeholders on 12 January 2015. The provisional agenda and the Chairperson's comments and questions were circulated by the Secretariat on 23 January 2015. He raised the following issues, which were answered by some missions: elements of the Charter of the United Nations, the victim-centred approach to the notion, the principles of international law and State actions to promote the future text. All governmental delegations again supported the approach put forward by the Chairperson-Rapporteur, in particular the transparency, consensus and inclusiveness of the process.

In particular, the Russian Federation stated that the second session identified clearly the points of divergence and convergence and that the third session should build on convergent issues. They considered the declaration as an expression of political will and not a legally binding document and thus would not expect any monitoring or follow-up mechanism. It should be based on the three pillars of peace, human rights and development. The United States of America appreciated the approach, in particular the consensus, and announced that they would continue to participate actively despite voting against the resolution setting up the WG. They wanted to focus its attention on those points of convergence among all different States. In addition, Algeria stressed that they did not want a 'Christmas tree' like the Advisory Committee had made in the past.

In addition, the Chairperson-Rapporteur met on 26 February 2015 in the morning with UN entities based in Geneva on the premises of the Mission of Costa Rica. They made useful contributions in terms of text, but in particular they focused their attention on draft Article 3 on the role of the UN entities and international organizations in the promotion of the future instrument. They considered that this Declaration contains all main elements and consequently, it would be a very useful instrument to implement their peace-building programs in the field.

The same day in the afternoon, the Chairperson-Rapporteur also met with NGOs at the Palais des Nations. He assured civil society organizations that he was listening very carefully to the proposals made by them and that he had identified some interesting points to be taken into consideration, such as the mention of the three Declarations (Right of Peoples to Peace, Preparation of Societies for Life in Peace and Principles on International Law concerning Friendly Relations and Cooperation among States in accordance with the Charter of the United Nations). Other interesting elements were the Preamble of the UNESCO constitution; the issue of the eradication of poverty; the concept of eradication of inequality; the respect for life and practice of non-violence linked to education; the concept of peace infrastructures; violence, and the inherent right to life in peace. The Chair mentioned that there were also a number of elements raised during the last informal consultations by NGOs that he would like to take into account (disarmament, nuclear weapons, notion of democracy, issue of a monitoring mechanism, contentious objection, and environmental issues) which did not enjoy support by countries.

The Chair also stressed that most of the elements proposed by the Advisory Committee were not accepted even by those countries that support the initiative of the right to peace within the Human Rights Council. He again invited some NGOs to read both his report of the first session of the Working Group, which made a reading of the Advisory Committee text, and the statements delivered by States to better understand which stage the process is in at the HRC now.

Afterwards, David Fernandez (Mission of Costa Rica) referred to resolution 14/3 adopted in 2010 which had requested the Advisory Committee to prepare a declaration of the right of peoples to peace and called upon States and relevant United Nations bodies to promote the effective implementation of the Declaration and Programme on a Culture of Peace. He stressed that the elements included in the Advisory Committee text had been previously elaborated by the Programme of Action on Culture of Peace (i.e. migrants, refugees, disarmament, environment, rights of victims, economic rights...). Additionally, he pointed out that these elements were also included in the Programme of Action of Vienna. He recalled that since 2008 the HRC has elaborated some measures in all its resolutions aimed at promoting the right of peoples to peace. Finally, he stated that the main holders of the right of peoples to peace are States. Therefore, we need to go beyond by recognizing the victim approach of this notion without taking a step backwards.

“Consensus is neither compromise nor unanimity; it aims to go further by weaving together everyone’s best ideas and key concerns.”

3. Consensus in Action

Since the beginning of the negotiation process, the Chairperson-Rapporteur has always repeated that the work of the OEWG should be based on the TICO approach, which means the process is based on transparency (T), inclusiveness (I), consensual decision making (C) and objectivity (O), and a little realism. In this context, realism means that the Chairperson-Rapporteur shall conduct the negotiations by taking into consideration not his personal opinion on this topic, but the inputs received by the main drivers of the process – States – and other stakeholders – UN entities, international organizations and civil society. This consensual approach always needs specific diplomatic skills to identify a solution that is agreeable to a core set of delegates and then bring others into that group.

Consensus is a process of non-violent conflict resolution. In this type of process, everyone works together to make the best possible decision for the group. All concerns are raised and addressed, until all voices are heard. Since proposals are not the property of the presenter, a solution can be reached at cooperatively. Reaching consensus on a proposal does not mean that everyone is in agreement. It only means that all important concerns raised have been addressed, and unresolved concerns are at a low enough level that everyone feels that the goals of the group are being furthered by the proposal.

Consensus decision making is a creative and dynamic way of reaching agreement between all members of a group. Instead of simply voting for an item and having the majority of

the group getting their way, a group using consensus is committed to finding solutions that everyone actively supports, or at least can live with. Consensus is neither compromise nor unanimity; it aims to go further by weaving together everyone's best ideas and key concerns. At the heart of consensus is a respectful dialogue between equals. Consensus is looking for 'win-win' solutions that are acceptable to all, with the direct benefit that everyone agrees with the final decision, resulting in a greater commitment to actually turning it into reality.

In the disarmament affairs all resolutions are adopted by consensus. In addition, the convention on cluster munitions and landmines operates through the rule of consensus among all countries. The World Health Organization, the International Labour Organization, the United Nations Educational, Scientific and Cultural Organization and the World Trade Organization, among others, also operate on the unwritten rule of consensus. The Security Council is actually divided on just a limited number of issues; 92 percent of their resolutions operate by consensus. The majority of resolutions (such as 81 percent) adopted by the Human Rights Council in each session are also adopted by consensus.

It follows that consensus is the norm and tendency not only in international relations, but in the United Nations as well. In international relations, States cede part of their sovereignty on the condition that their individual voice should be heard. In general terms, the United Nations does not work like a national or regional parliament in which some political parties impose their will by using the majority of votes. For important matters affecting the life of millions of people, the United Nations, including its multiple entities and bodies, works on the basis of multilateralism with the purpose of reaching important consensual decisions.

On the basis of the UN spirit and multilateralism, the Chairperson-Rapporteur gives to the notion of consensus an important protagonism. Therefore, he gives all stakeholders a solemn call to help guide themselves in this process by recognizing the supreme importance of practicing tolerance, dialogue and cooperation. To that end, the main priority in this process is to create a solid basis with the purpose of sparing future generations the scourge of war and ensuring the maintenance and perpetuation of humankind. This highest aspiration can only be realized if all Member States and other stakeholders operate by the unwritten UN rule and tendency of consensus and dialogue.

4. The Three Pillars of the United Nations

On 26 March 2015 the Human Rights Council adopted by consensus in its 28th regular session under the leadership of the Russian Federation a presidential statement on the seventieth anniversary of the end of the Second World War by which the "Council pays tribute to all victims...", "...stresses that this historic event established the conditions for the creation of the United Nations, designed to save succeeding generations from the scourge of war...", "...calls upon the States Member of the United Nations to unite their efforts in dealing with challenges and threats to international peace and security, with the United Nations playing a central role ..." and finally "...underlines the progress made since the end of the Second World War in overcoming its legacy and promoting reconciliation, international and regional

cooperation and democratic values, human rights and fundamental freedoms, in particular through the United Nations ...”.

Seventy years ago, the UN Charter established the three founding pillars of the United Nations: peace and security, human rights and development. Since 1945 these pillars have provided the framework for the United Nations to tackle important challenges. We cannot pick and choose which pillar the United Nations should support, nor can we focus on one to the detriment of the others. To do so would be to ignore the lessons of the past 70 years, and to invite future conflicts.

On 21 August 2014, the General Assembly adopted the resolution 2171 by which it expressed “... its determination to pursue the objective of prevention of armed conflict as an integral part of its primary responsibility for the maintenance of international peace and security” (para. 1) and called upon “...all States to intensify efforts to secure a world free of the scourge of war and conflict” (para. 2). In this resolution Member States also expressed their deepest concern about the high human cost and suffering caused by armed conflicts and also recognized that peace, security and development are mutually reinforcing, including in the prevention of armed conflict (preambular paragraph 12).

The resolution 60/251 on the Human Rights Council adopted by the General Assembly on 15 March 2006 recognised in its preambular paragraph 6 that “peace and security, development and human rights are the pillars of the United Nations system and the foundations for collective security and well-being, and recognizing that development, peace and security and human rights are interlinked and mutually reinforcing.”

The three UN pillars have been recognised by the Human Rights Council as a fundamental element aimed to promoting the right of peoples to peace. In particular, resolutions 11/4 of 2009, 14/3 of 2010 and 17/16 of 2011 have constantly been stressed in its operative sections. They emphasize that peace and security, development and human rights are the pillars of the United Nations system and the foundations for collective security and well-being. Therefore, it follows that the three UN pillars are strongly linked to the issue of the right of peoples to peace.

During the High Level Segment of the 28th session of the Human Rights Council held in March 2015, dignitaries recognised the centrality of the UN pillars in the work of the United Nations. The Ministry for Foreign Affairs of Slovakia stated that there are no prospects for peace and security without respect for basic human rights and fundamental freedoms. The Ministry of the Principality of Liechtenstein stressed that today there is a general agreement that human rights, development and peace and security are closely interlinked and therefore, the United Nations cannot achieve its mission with a severely underfunded pillar. In addition, the Vice-Minister of Japan highlighted that protection of human rights is one of the three pillars of the United Nations’ activities along with peace and security and development. All these ideas about the three UN pillars were also included in the statements delivered by the Ministries of Foreign Affairs of Germany, Cameroon, El Salvador, Vietnam, Nepal, Burkina Faso, Sierra Leone and Romania.

5. The Future Declaration in Perspective

The future Declaration, which is being discussed within the Human Rights Council, shall help the UN entities, bodies, international humanitarian organizations and civil society, among other actors, to develop its programmes of peace building and reconciliation, as follows:

- It would help to achieve a coordinated response on a world-wide scale to those threats to human rights arising from the global interdependence of all individuals and nations;
- It would strengthen international cooperation, united interests and joint action in order to achieve its collective goals;
- It would provide a solid basis to elaborate progressively the Programme of Action on establishing a culture of peace;
- It would proclaim the universal principles developed under international human rights law (i.e. freedom from fear and want, equality and non-discrimination and justice and rule of law);
- It would recognize that the holistic concept of peace goes beyond the strict absence of armed conflicts (negative peace). Peace is also positive, since it is linked to the effective respect for all human rights and fundamental freedoms without discrimination (civil, political, economic, social, cultural rights and the right to development);
- It would help to understand that the enjoyment of peace is both the precondition and the final purpose of international human rights law.
- It would assist States and International Organizations to focus on the development of the three pillars on which the Charter of the United Nations is based, namely: peace and security, human rights and development.

6. Conclusions

The aspiration to create a society in which war plays little or no part in the life of our fellows has fired the human imagination throughout the history of humankind. The champions of peace have only obtained half-triumphs in their attempts at reaching a more peaceful world, because “peace has always conduced to a war”.¹

The future Declaration to be elaborated by the Chairperson-Rapporteur will surely contribute to the strengthening of international cooperation and multilateralism and will also influence the current objectives of the United Nations as a fundamental step towards the promotion of peace, tolerance, friendship and brotherhood among all peoples. Today the obligation of the international community is to hear the voice of victims, which strongly demands the right to live in a world free of wars and conflicts.

This year the United Nations is commemorating the 70th anniversary of its inception. The most important message that should be given by the United Nations is the adoption by consensus of a Declaration which takes into account all different positions, and above all pays

real tribute to all victims of war and conflict. The Declaration shall be an instrument aimed at raising the voice of the voiceless.

The future of peace deserves our efforts and imagination. For global problems affecting peace and stability, we need global solutions based on cooperation and multilateralism. For the maintenance and perpetuation of humankind, we need to concentrate our thoughts on the present and future generations. For the promotion of agreements and dialogue, we need to liberate peace from the chains of war, incomprehension and hatred. Today our responsibility is to advance in the world peace agenda.

Our children will always thank us for our compromise and engagement with this noble cause. Let us not fail in our attempt to make peace prevail over earth! Let us not close the door to our dreams and hopes of a better world! Let us not ignore our basic need to live in harmony and brotherhood! Let us make an effort to give peace a real chance....

“Let us not ignore our basic need to live in harmony and brotherhood! Let us make an effort to give peace a real chance...”

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Notes

1. Gaston Bouthoul, *Huit mille traités de paix* (Paris: René Julliard, Sequana, 1948), 12-13

Annexure

[United Nations Declaration on the Right to Peace]

Preamble

The General Assembly

Art. 1 and 2 of the UN Charter

Guided by the purposes and principles of the Charter of the United Nations

UDHR, UNGA Resolution 217 A (III), 10 December 1948; ICCPR, UNGA Resolution 2200A (XXI), 16 December 1966; ICESCR, UNGA Resolution 2200A (XXI), 16 December 1966

Recalling the Universal Declaration of Human Rights and the International Covenants on Civil, Political, Economic, Social and Cultural Rights

UNGA Resolution 41/128 on Declaration on the Right to Development of 1986, UNGA Resolution 55/2 on Millennium Declaration of 2000 and Vienna Declaration and Programme of Action of 1993

Recalling the Declaration on the Right to Development, the Millennium Declaration, including the Millennium Development Goals and the Vienna Declaration and Programme of Action

Resolution 33/73 on Declaration on the Preparation of Societies for Life in Peace, 15 December 1978; Resolution 39/11 on Declaration on the Right of Peoples to Peace, 12 November 1984 and Resolution 53/243 on Declaration and Programme of Action on Culture of Peace, 13 September 1999

Mindful of the Declaration on the Preparation of Societies for Life in Peace, the Declaration on the Right of Peoples to Peace and the Declaration and Programme of Action on a Culture of Peace

UNGA resolution 25/2625, 24 October 1970

Recalling that the Declaration on Principles of International Law concerning Friendly Relations and Cooperation among States in accordance with the Charter of the United Nations recognised that friendly relations among nations are based on the respect for the principles of equal rights, self-determination of peoples, territorial integrity, political independence, international cooperation, peaceful settlement of disputes, sovereignty and non-interference in domestic jurisdiction of any State (notions included in the Declaration)

Art. I.2, UNGA resolution 49/60, 9 December 1994

Recalling that the Declaration on Measures to Eliminate International Terrorism recognised that acts, methods and practices of terrorism constitute a grave violation of the purposes and principles of the United Nations, which may pose a threat to international peace and security, jeopardize friendly relations among States, hinder international cooperation and aim at the destruction of human rights, fundamental freedoms and the democratic bases of society

First Pillar: Peace and Security

Preamble, para. 1 and Art. 1.2 of the UN Charter

Recalling the determination of the peoples of the United Nations to practice tolerance and live together in peace with one another as good neighbors in order to save succeeding generations from the scourge of war, to reaffirm faith in fundamental human rights, and to promote social progress and better standards of life in larger freedom (Partially drafted on the basis of the inputs received at the 2nd session of the OEWG)

Preamble, paragraph 6, Resolution 60/251 on the Human Rights Council adopted by the General Assembly on 15 March 2006 and Art. 72, World Summit Outcome Document, Doc. 60/1, General Assembly, 24 October 2005

Recalling that peace and security, development and human rights are the pillars of the United Nations system and the foundations for collective security and well-being, and recognizing that development, peace and security and human rights are interlinked and mutually reinforcing

Preamble, paragraph 4, Declaration on a Culture of Peace, 13 September 1999

Recognizing that peace is not only the absence of conflict, but also requires a positive, dynamic participatory process where dialogue is encouraged and conflicts are solved in a spirit of mutual understanding and cooperation.

Second Pillar: Human Rights

Preamble, paragraph 1, Universal Declaration of Human Rights, 10 December 1948

Recalling also that the recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world, and that freedom, justice and peace are prerequisite for the enjoyment of dignity and of inalienable rights by all members of the human family

Preamble, paragraph 2, Universal Declaration of Human Rights, 10 December 1948

Recalling that disregard and contempt for human rights have resulted in barbarous acts which have outraged the conscience of mankind

Art. 28, Universal Declaration of Human Rights, 10 December 1948

Recalling in particular that everyone is entitled to a social and international order in which the rights and freedoms set forth in the Universal Declaration of Human Rights can be fully realized

Part. I, Art. 5, Vienna Declaration and Programme of Action on Human Rights, 12 July 1993

Recalling that all human rights are universal, indivisible, interrelated, interdependent and mutually reinforcing, and that the international community should treat human rights in a fair and equal manner, on the same footing and with the same emphasis

Art. 5, paragraph f, Resolution 60/251 on the Human Rights Council adopted by the General Assembly, 15 March 2006

Recalling that the United Nations contributes, through dialogue and cooperation, towards the prevention of human rights violations and abuses and prompt responses to human rights emergencies (Partially drafted on the basis of the inputs received at the 2nd session of the OEWG)

Third Pillar: Development

Art. 19, World Summit Outcome Document, Doc. 60/1, General Assembly, 24 October 2005

Recalling the world commitment to eradicate poverty and promote sustained economic growth, sustainable development and global prosperity for all and the need to reduce inequalities within and among countries

Art. 74, World Summit Outcome Document, Doc. 60/1, General Assembly, 24 October 2005

Recalling the importance of prevention of armed conflict in accordance with the purposes and principles of the Charter and of the commitment to promote a culture of prevention of armed conflict as a means of effectively addressing the interconnected security and development challenges faced by peoples throughout the world

Preamble, paragraph 12, Convention on the Elimination of All Forms of Discrimination against Women, 18 December 1979)

Recalling that the full and complete development of a country, the welfare of the world and the cause of peace require the maximum participation of women on equal terms with men in all fields

Peace Education and Culture of Peace

Preamble, paragraph 1, UNESCO Constitution, 16 November 1945

Recalling that since wars begin in the minds of human beings, it is in the minds of human beings that the defenses of peace must be constructed (This provision has partially been cut and pasted. The notion of “men” has been replaced for “human beings”, in order to include a more neutral language and take into account the gender approach)

Art. 74, World Summit Outcome Document, Doc. 60/1, General Assembly, 24 October 2005

Recalling also that the wide diffusion of culture, and the education of humanity for justice and liberty and peace are indispensable to the dignity of human beings and constitute a sacred duty which all the nations must fulfil in a spirit of mutual assistance and concern (This provision has partially been cut and pasted. The notion of “men” has been replaced for “human beings”, in order to include a more neutral language and take into account the gender approach)

Art. 1.A and 1.F, Declaration and Programme of Action on Culture of Peace, 13 September 1999

Recalling that a culture of peace is a set of values, attitudes, traditions and modes of behaviour and ways of life based on, among others, respect for life, ending violence and promotion and practice of non-violence through education, dialogue and cooperation and the right to development

Art. 34, Vienna Declaration and Programme of Action on Human Rights, 12 July 1993

Recalling that a culture of peace is greatly enhanced when Governments, the United Nations system as well as other multilateral organizations increase considerably the resources allocated to programmes aiming at the establishment and strengthening of national legislation, national institutions and related infrastructure, which uphold human rights awareness through training, teaching and education (This provision has partially been cut and pasted, by linking the notions of culture of peace and the role played by the United Nations and multilateral organizations)

Preamble, paragraph 7, Universal Declaration on Cultural Diversity, UNESCO, 2 November 2001

Recalling further that respect for the diversity of cultures, tolerance, dialogue and cooperation, in a climate of mutual trust and understanding are among the best guarantees of international peace and security

Art. 1, Declaration of Principles on Tolerance, UNESCO, 16 November 1995

Recalling also that the tolerance is respect, acceptance and appreciation of the rich diversity of our world's cultures, our forms of expression and ways of being human, as well as a virtue that makes peace possible and contributes to the promotion of a culture of peace

Art. 1, Declaration on the Preparation of Societies for Life in Peace – adopted in 1978 with two abstentions. On 12 December 2002, the UNGA adopted the resolution 42/91 “Implementation of the Declaration on the Preparation of Societies for Life in Peace” without vote which invited “all States to guide themselves in their activities by principles enshrined in the Declaration aimed at establishing, maintaining and strengthening a just and durable peace for present and future generations”

Recalling that every nation and every human being, regardless of race, conscience, language or sex, has the inherent right to life in peace

Purposes of the Declaration: Elimination of the threat of war and responsibility of present generations

The first part of the paragraph is language proposed by the Chairperson-Rapporteur and the second one makes reference Art. 9.1 and 9.2, Declaration on the Responsibilities of the Present Generations Towards Future Generations, UNESCO, 12 November 1997

Inviting solemnly all stakeholders to guide themselves in their activities by recognizing the supreme importance of practicing tolerance, dialogue, cooperation and solidarity among all human beings, peoples and nations of the world as a means to promote peace through the realization of all human rights and fundamental freedoms, in particular the right to life, and dignity. To that end, the present generations should ensure that both they and future generations learn to live together in peace and brotherhood with the highest aspiration of sparing future generations the scourge of war and ensuring the maintenance and perpetuation of humankind:

Article 1

Art. 2 of the Universal Declaration of Human Rights, Art. 38 of the ASEAN Declaration on Human Rights and the three UN pillars

Everyone is entitled to enjoy peace and security, human rights and development.

Article 2

Inclusion of equality and non-discrimination, justice and rule, freedom from fear and want (Preamble, paragraph 2 and Art. 2 and 8, UDHR)

States should respect, implement and promote equality and non-discrimination, justice and the rule of law and guarantee freedom from fear and want as a means to build peace within and between societies.

Article 3

Language proposed by the Chairperson-Rapporteur after consulting UN entities and humanitarian organizations.

The United Nations and specialized agencies, as well as international, regional, national organizations and local organizations, including civil society, should take appropriate sustainable measures to act, support and assist in achieving the present Declaration.

Article 4

Principle pro homine or pro persona. Language proposed by the Chairperson-Rapporteur

Nothing in the present Declaration shall be construed as being contrary to the purposes and principles of the United Nations. The provisions included in this Declaration are to be understood in the line of the Charter of the United Nations, the Universal Declaration of Human Rights and relevant international and regional instruments ratified by States.

The World is Helping Ukraine: Can Ukraine Help the World?

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Abstract

Because of the military aggression by Russia, Ukraine is in war, and is in a poor political, economic, social and ecological state. The world is helping Ukraine by condemning Russia's actions, by imposing sanctions on Russia and by financially helping the nation. A majority of the countries in the world are however themselves in a very poor state, with dissatisfied people, because not all their human rights can be ascertained and because the relations between people, groups and countries are harshly competitive.

When thousands of people manifesting against non-signature of the Treaty on Association with the EU and opting for European values were brutally attacked in Maidan, medical, psychiatric, and educational services were created. These services were initiated by individual people, without any instructions, or any help from the government. They did it out of the sense of obligation towards their fellow countrymen. Competent people joined the initiators and no competitive services were created.

Also, thousands of volunteers risking their lives went to fight against the Russian aggressors out of a sense of obligation towards their country. This is how "new Ukrainians" acted according to the new paradigm, out of a sense of obligation and in cooperation. This can inspire people in other countries to think and act to achieve the necessary new paradigm.

After World War II the USA helped rebuild the world through the Marshall Plan. As chair of the United Nations Human Rights Commission, Eleanor Roosevelt was the driving force in creating the 1948 charter of liberties: The Universal Declaration of Human Rights (UDHR). On 10 December 1948 the Universal Declaration was adopted by the General Assembly. Even though it was not legally binding, UDHR created big moral expectations. Some expectations were realized but difficulties emerged almost immediately. It was naturally assumed that governments had the power and also the responsibility to guarantee the rights of their citizens. The governments became overburdened and were unable to live up to the expectations of their citizens. It is now clear why.

The world then functioned on the basis of harsh competition between individuals, groups and countries. Within countries it was the more affluent members of the society who could ascertain their rights, like the access for their children to high quality education or the right to proper healthcare. This limited the ability of the majority of the population to ascertain similar

rights. A lot of dissatisfaction emerged with more criticisms of governments, making good governance more difficult, thereby increasing the competition for power within democratic countries.

Take the USA as an example. There is a small proportion of very rich people but nearly 45.3 million people live below the poverty line.¹ The difference between the rich and the poor is by far the greatest of the 20 developed countries. This difference has some very negative consequences: the state of health is by far the worst, the proportion of mentally ill is the highest, the cost of healthcare per person is by far the highest and the incidents of incarceration are by far the highest.² This is well described in the book *Ill Fares the Land* by Tony Judt.³

Similar situations arose in relations between different countries. All democratic countries were “preaching” to poorer countries the need for adherence to the UDHR, yet they themselves made it more difficult for poor countries to guarantee the rights of their citizens. American, French and German companies obliged African countries to buy their manufactured goods at high prices and to sell raw materials at high prices.⁴ These African countries remained poor, thus even in countries with reasonably honest governments it was impossible to guarantee the most basic, vital rights for their citizens such as access to fresh water, primary education or any kind of healthcare.

According to orthodox economics, there has been a significant increase in GDP per capita in nearly all countries. The feeling of well-being, according to orthodox reasoning, has also increased. There is, however, no direct relation between increase in GDP and the feeling of well-being. In some countries, take Costa Rica for example, GDP per capita is low,⁵ the index of happiness is high (score of 7.3 out of ten, ranks 12th among 88 countries).⁶ In other countries in which there is a tremendous competition between people and companies, a lot of pressure is generated to perform better and better, the relation between high GDP and feeling of happiness is inverse. For instance, between the beginning of January 2008 and April 2011, more than 60 French Télécom (now Orange) employees committed suicide.⁷

One can conclude, therefore, that the UDHR and harshly competitive relations have led to a win-lose situation with few winners and a majority of losers.

What the world needs is a shift to a new paradigm, i.e. a Universal Declaration of Human Obligations and change from competitive to cooperative relations.

How can Ukraine help the world make this shift?

Thanks to Maidan, to the young people mainly, and to Russian aggression, Ukraine transformed itself from a multi-ethnic country to a multi-ethnic patriotic political nation. This nation opted for European choice, European value of freedom, truth, liberties and dignity of the individual. Recently, Bishop Borys Gudziak, Founder and Former Rector of Ukrainian Catholic University (UCU) in Lviv, now in Paris, said: “the transformation of Ukraine reminded Europeans of what their values are”. He added that “it was the students of UCU in Lviv that went on their Maidan before November 29 2013, and called upon the young people to do the same in Kyiv”.

The above citation underlines the role the young generation has played in the transformation of the Ukrainian people. This implies that the transformation of the governance of Ukraine will also have to be carried out by young people.

What had started even before Maidan was a program called Young Generation Will Change Ukraine (YGWCU). Its mission is transformation of the structure of political power, economic system, social and environmental policies without revolution. How is the program working? Young people, in the age group of 20-35 with good education, knowledge of English and interested in doing something for Ukraine, form groups of seven people. Each group is composed of people with different education, knowledge or interest in politics, economics, social sphere and the environment. They study six European countries which are effective, i.e. with four characteristics:

- Full political freedoms (transparency and openness of government);
- Certain level of economic prosperity for the whole population;
- Social justice, especially in education, healthcare, employment, pension schemes;
- Symbiosis with the biosphere (nature, environment) rather than its exploitation, destruction, pollution.

Five states match the criteria mentioned above: Austria, Germany, Norway, Sweden and Switzerland. Poland is added to the list as a country which has most of the above mentioned characteristics and which passed through 3 stages of Transformation.⁸ Starting from changing its mentality during *Solidarnosc* time; then transformation of its economic system through shock therapy by Leszek Balcerowicz;⁹ and finally – political transformation while preparing for membership of Poland in the EU.

Each group in the program YGWCU decides which country it wants to explore. They first study all the facts on the Internet: the Constitution, the structure of the Parliament, the responsibilities of the Head of the State, of the Government and the role of the civil society. They then have a meeting with the Ambassador of the chosen country, ask questions, listen to suggestions. Following such a meeting, each group prepares a study trip to the chosen country through direct contacts with members of the Parliament, representatives of various ministries, of the political parties, some NGOs. Once they return to Ukraine, they write reports and publish articles, hold seminars and share with interested people what they have learned in the chosen country.

The clear purpose of the above is to select components for the architecture of future social political order of Ukraine which should have the four abovementioned characteristics. These young people continue on the road towards transformation of Ukraine in two different ways: some of them form groups and prepare themselves for the 2015 elections to city and regional councils, as sort of apprenticeship in the legislative process. Others will form groups according to professional criteria (finance, education, healthcare, environment) and will integrate the executive branches of the government. After a few years, with hundreds of such young people having gone through the process, they will create a new political philosophy,

ideologies and plans of actions. Then, three new parties or one party with a large spectrum (socialist, centric and liberal) will emerge.

One part of participants of the program will go for election to the Parliament, where they are likely to be ideologically, programmatically and morally a majority. The other will hold higher positions of the executive branch of the government.

The program is working extremely well. 14 groups of seven people have completed the first phase in 2013, 23 in 2014 and 71 groups have registered for participation in 2015. It shows an amazing mobilization of young activists who are a moving force for socio-political changes.

When the brutal repression of people started in Maidan, another transformation of Ukrainians took place: medical, psychiatric and educational services were created. These services were initiated by professionals in the respective fields without any orders from the state authorities or any assistance from them. They did it out of the sense of **obligation** towards their fellow-countrymen, towards the country. Each of the people that launched the service was joined immediately by other qualified people, so they worked in **cooperation**. Moreover, there were no such parallel services created, there was **no competition** between them.

The above initiative confirmed the choice of European values, with one slight difference. The Ukrainians have acted, I emphasize, out of a sense of **obligation and in cooperation rather than on order and in competition**.

There is some similarity between the above and direct democracy as it functions in Switzerland. The Swiss Parliament elects seven people to become members of the Federal Council (the government) from five biggest parties.¹⁰ Members of the Federal Council are not spokesmen for their parties, yet they carry with them their parties' ideologies. The decision-making process requires a consensus rather than a simple vote.¹¹ Each of the members of the Council shares his or her concerns on the subjects they care about: representative of the socialist party will try to get some more money for education and healthcare, the liberal, some better conditions for enterprises, etc. In this way everyone gets something and there are no total losers.

Values and behavior exhibited in Maidan (a sense of obligation and cooperation), like the Swiss consensus, are important for the world to become healthier.

Another initiative strengthens the possibility for Ukraine to be able to help the world. In September 2013, in Ottawa, a meeting of the board of trustees of WAAS was held, followed by a joint conference with the Club of Rome. I had raised the issue, with my colleagues from the Academy, of the need for the Universal Declaration of Human Obligations (UDHO) and offered to prepare a proposed list of obligations. I produced the list with my 23-year old Ukrainian assistant's help in Geneva, where I am President of Vidrodgenia (Renaissance) Foundation. In November 2013, a conference was held in Almaty (Kazakhstan), with participation of members of WAAS and the World University Consortium (a consortium that aims to promote development of accessible, affordable, quality higher education worldwide). My assistant Alexandra Telychko presented the Proposed List of Obligations at the conference.

There was yet another initiative. Two 22-year old participants of the YGWCU program studied the functioning of the General Assembly of the UN and suggested that Ukrainian delegation to the UN should include two representatives of the young generation. We advised the Ministry of Foreign Affairs to take the two young persons in question as official members of the delegation. This was done for the first time since the independence of Ukraine in 1991. One of the tasks for the young representatives was to prepare the ground for the presentation of the list of the UDHO when the General Assembly will discuss Millennium goals for 2015-2025. Our two young delegates established good contacts with young delegates of other countries, to cooperate with them in proposing better youth policies and in promoting the adoption of the UDHO.

“A shift from the win-lose mode to win-win game is necessary by acting out of a sense of obligation in the spirit of cooperation.”

Few weeks ago, I received a letter from the Head of the Ukrainian delegation to the UN, saying that the two girls in question have been working most effectively in various committees and that the inclusion of representatives of young generation in the delegation should become normal practice.

When Ukraine becomes transformed, living and acting according to the New Paradigm will spread to the majority of the population, including the business and political sectors.

When the world shifts to the New Paradigm, a much greater proportion of its population will be able to enjoy the rights: as per UDHR, our heritage of values and philosophy from the constructive 40s of the past century.

To summarize, the world is not in a healthy state. It needs some help in healing itself, in revitalizing its values of freedom, dignity of the individual, supremacy of law, social justice (rather than focusing just on money). A shift from the win-lose mode to win-win game is necessary by acting out of a sense of obligation in the spirit of cooperation.

Ukraine can be of help in the process because it has gone through a very painful process of recreating itself through a new birth, with values and behavior mentioned above, which could be useful for the world to emulate.

Proposed Declaration of Human Obligations*

1. Speak the truth, be honest, act according to moral ethical standards.
2. Maintain your health in the best possible state in order not to burden the society with the cost of your healthcare.
3. Learn, develop your talents, capabilities, competence throughout your life to be a productive member of the society.
4. Treat others as you want others to treat you.
5. Be a free person, i.e. the ultimate judge of what is true and what is not, what is good and what is bad, yet keep testing your judgment to make sure that it is in line with moral, ethical principles.
6. Search for harmony between your private, professional, social lives, and as part of the community.
7. While seeking to ascertain your rights, avoid constraining other members of the society to ascertain theirs.
8. Solve as many problems, issues as possible at individual, family, community levels to lighten the burden and cost of governance.
9. To family:
 - Cherish cultural heritage from your predecessors.
 - Treat parents with love and respect, help them if needed.
 - Deal with siblings as if they were your best friends.
10. To parents:
 - Love your children, inculcate in them ethical moral values.
 - Facilitate their education and development of their talents and personalities as free people.
11. To community:
 - Relate to people and communities with respect and empathy.
 - Help the community to be effective in supplying all services, such as primary education, healthcare, social services.
 - Contribute to the well-being of all members of the community.
 - While maintaining your identity, be consciously part of the whole world community.
12. To the environment:
 - Use all resources sparingly, avoid pollution of the biosphere. Help preserve the biological and zoological diversity.

* Prepared by Prof. Bohdan Hawrylyshyn with the assistance of Alexandra Telychko, Junior Fellow, World Academy of Art & Science

13. To your country:

- Obey the laws of the country.
- Help your country in line with your ability/capacity to maintain the priority of the common good: full political freedoms, a certain level of economic well-being of the whole population, social justice, healthy environment.

14. To future generations:

- Leave the physical environment in a better state than inherited: with enhanced cultural heritage, values, to enable future generations to be more effective in political, economic, social, cultural aspects of their societies.

15. To the world:

- Protect and promote resilience, creativity and equal opportunities for all.
- Be tolerant and respectful of all races, ethnics, religions, languages.
- Learn some languages and at least basic things about other civilizations.
- Promote the understanding of the diversity of civilizations, their values, thus peaceful cooperation and fair trade.

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New Paradigm Quest

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Abstract

Global economic growth has undoubtedly produced enormous benefits for hundreds of millions of people in both developed and developing countries. But we are heading fast into a perfect storm of connected environmental, economic and social challenges. The issues confronting the world community today are more intense and threatening than those we have faced in the past. They are on an unprecedented scale, with truly global implications; they are evolving fast; they are essentially connected and systemic and they will behave, individually and together, in non-linear ways.

The world needs to stop looking backward. Since the 2008 financial crisis, we have wasted far too much energy trying to return to the days of rapid economic expansion. The flawed assumption that the post-crisis world's challenges were only temporary has underpinned policies that have yielded only lackluster recoveries, while failing to address core problems.

The post-crisis era is over, and the "post-post-crisis world" is upon us. It is time to adopt a new framework of systemic solutions that promote shared prosperity within the global world of today and tomorrow.

The world today is in the transit situation, in which the elements of a new postmodern world historically coexist with the realities of the modern epoch. Hence we face a radically new reality, individually as well as collectively. Change is no longer a mere theory, and it is no longer just an option: it is a reality, a "*conditio sine qua non*" of our survival. Due to on-going change and regardless of our acceptance, the world will differ so much in 10 years that we will be surprised with our current concerns:

- An integrated global economy functioning as a holistic entity will spur deep reframing of global governance;
- IT and communications revolution connecting billions of people to rapidly expanding volumes of data will evolve into a Meta web that will change social standards and human behaviour patterns;
- A completely new balance of political, economic, and military power will shift "centres of gravity" from West to East, from North to South, and from nation-states to private actors;

- A radically new relationship between the aggregate powers of human civilization and the Earth's ecological systems on which humankind depends will force us to develop new patterns of production, trade and consumer standards;
- A new revolutionary set of powerful biological, biochemical, genetic, and materials science technologies, synthetic biology and human enhancement will advance human capacities to and possibly beyond the limits of the traditional definitions of humanity.

“All environmental problems, from chemical pollution to global warming, are unintended consequences of technological progress.”

The international system is also changing literally in front of our eyes. Numerous changes are occurring in the models of social, economic, and political activity, in projections of power and authority. The cultural landscape and its relevant “content structures” (democracy, liberalism are examples) are changing simultaneously. Human behavioral patterns and their matching mechanisms are acquiring new systemic qualities.

Interestingly and importantly, our map of the world is also changing, giving us a deeper understanding of the nature of quantum shifts in a complex universe combining intertwined systems of nature, economics, politics, as well as social and cultural domains. However, despite this understanding, the world continues to be perceived and analyzed as a “fragmented integrality”. But application of fragmented or partial vision, considerations, concepts, knowledge, sciences, methodologies and policies inevitably end in “unintended consequences”. There are plenty of examples of this, in fact all environmental problems, from chemical pollution to global warming, are unintended consequences of technological progress.

“Policy makers need to consider the economic system as a whole, linking areas previously considered unrelated.”

Crowning this, or perhaps symptomatic of these shifts, the international situation is becoming more and more complex and worrisome. As a result the challenges of the systemic change management have become more and more sidelined by the multiplying and seemingly separate economic, social and geopolitical problems. The crisis in Ukraine, the turmoil in the Middle East, the future of the European Union, the political and economic trajectory of China and the growing importance of Africa, and the recent Ebola epidemic have downgraded the sustainability agenda into an academic if not a science fiction discussion rather than a major global challenge locking the world to the agonizing development path.

To avoid this, the world requires transformational change capable of paving the way to the creation of a new developmental paradigm, which enhances access, health and security, creates jobs and safeguards the environment. Actualisation of this potential requires a different way of thinking about economics.

Rethinking economics means policy makers need to consider the economic system as a whole, linking areas previously considered unrelated – such as energy and jobs, water and sanitation and healthcare, rural development and security, governance and development. Herein lies the biggest change: adopting a truly holistic approach, which not only takes into account the interests of short-term growth, but provides the opportunity for sustainable and inclusive development.

“If a system is fundamentally flawed, making it more efficient or accountable will not resolve the problem.”

In searching for new models of economic development, two important issues must be distinguished and addressed. First, how to produce more in order to meet increasing demand while making less of an impact on resources (often referred to simply as “decoupling”).

Second – even more fundamental – how to limit the increase in overall demand. The challenge is immense as currently we are in a completely contradictory situation where the more successful we are at promoting growth of the existing model, the greater and quicker will be the environmental and social disaster. We need a total reversal of fortunes. Fortunately, many good and workable ideas that the technology is ready to deploy are already in the pipeline.

However what is needed to move ahead is nothing less than a revolution in the way we use natural resources. Our economy will require a fundamental transformation within a generation – in energy, industry, agriculture, fisheries and transport systems, and in producer and consumer behaviour.

And the clever euphemisms like ‘green economy’ or ‘shared sustainable growth’ would not help. If a system is fundamentally flawed, making it more efficient or accountable will not resolve the problem. This model locks the world in continuing crisis, social injustice and the danger of environmental disaster. What we need today is to decouple economic growth from the use of energy and materials; simply increasing resource efficiency will not take us where we want to be. I am not questioning the objective of increasing energy and resource efficiency; essentially, we have no choice. What has to be questioned, however, is how production and consumption are being organized today.

A lot will depend on the transformation of business models. It’s time to decouple the issue of business environmental and social responsibility from the political correctness myths. The business of a business is business and regardless of any “ethical mantras” it will not become a not-for-profit activity. But the world is changing and there is a growing business case for the private sector to become more resource efficient and to support green growth.

To achieve this the state should create incentives for social and environmental transformation of business models adopting legal frameworks that make sustainability as strategic for business as customers and profits and thus create incentives for social and environmental transformation of business models.

When I joined Green Cross, shortly after its founding in 1993, I knew we had a long battle ahead to influence a change in the values of people, business and government, to turn sustainability into a development pillar.

This is taking hold but is much slower than needed. A growing number of nations are committed to fighting climate change. Europe is championing green energy. China has *de-facto* recognized its development must be sustainable. The UN adopted the right to water as a human right. Oil multinationals, car manufacturers and chemical companies are parading their environmental credentials. Pollution, climate change and the depletion of natural resources have replaced nuclear weapons as the existential threats keeping voters awake.

There is awareness, and there are many examples of what is needed, thanks to initiatives being undertaken by companies, governments and individuals. But this has to be stepped up, and governments have to facilitate this expansion with incentives for circular economic and business models, green and smart energy technologies, while stopping to turn the clock back on out-dated approaches, like subsidizing fossil fuels.

In fact the modern energy development trends provide interesting opportunities to aggressively engage on this agenda. The primary focus of policy makers has been on the cost of delivered electricity. However, broader issues are starting to drive the debate, including local and global environmental impact and socio-economic benefits.

As policy choices across generation technologies address environmental impact, planning can take place in a more integrated manner – a much-needed recognition of the energy, water and food nexus, which governs the long-term sustainability of economies and quality of life.

Maximising the socio-economic benefits of renewable energy deployment, and job creation in particular, relies on a combination of policies that stimulate investment, promote education and training, support industrial development and encourage research and innovation. These policies can only be successful if they are stable over time, tailored to country and community specific conditions and supported by stakeholders.

Therefore, it is important to encourage adoption of public policies favouring and even accelerating renewable energy cost reductions. The technical and economic feasibility of renewable energy projects is highly dependent on the markets where they are being deployed. Renewable energy deployment can incur significant costs associated with policy, regulatory and deployment risks specific to local markets. The governments and local administrations must be encouraged to address these risks by ensuring stability and predictability in policies, streamlining permitting and grid-connection processes, promoting capacity building to meet skills needs and introducing financial risk mitigation tools.

In addition the grid integration and management of variable renewable energy require precision and accuracy. Adequate planning is necessary for the timely development of grid infrastructure, investment in smart infrastructure and storage technologies and the formulation of enabling regulatory frameworks. As ideas are easy but execution is hard there is a huge implementation gap that is blocking progress. Civil society organisations working in

the communities could contribute to closing this “knowing-doing” gap and provide “bankable” solutions at the local level, where large international programs often lack traction.

“Achieving the required level of global, systemic change will require true political leadership, prophetic vision and courage.”

Further, the nexus between energy, health, food, education and water presents important opportunities for renewable energy. Today over a billion people globally are served with un-electrified health facilities. In 2010, an estimated 287,000 women died of complications from pregnancy and childbirth, many of which could have been averted with minimal lighting and appliance operating services (SE4ALL). Modern energy access is also needed to refrigerate vaccines and other medicines in rural villages.

However, the UN Food and Agriculture Organisation estimates that by 2025, 1.8 billion people will be living in regions stricken with absolute water scarcity, while two-thirds of the world population could be under stress conditions. The United Nations Environment Programme (UNEP) assesses that, by 2025, water withdrawals will increase by 50 per cent in developing countries, and 18 per cent in developed countries. According to UNEP and UN-Habitat, about 80 per cent of wastewater from human settlements and industrial sources is discharged to the environment without treatment. Renewable and decentralized energy sources seem to be the only option available for the inevitable growth of energy demand in the future.

Similar potential exists in education. More than 50% of the children in developing countries go to primary schools without access to electricity. A more holistic approach to energy access is needed to look beyond households to community-based institutions, including healthcare and education. Here the integrated sustainability approach could add value to community-based renewable energy transition.

The development of new approaches to manage the imminent socio-economic transformations while respecting the realities of the natural world offers a myriad of positive opportunities to generate the new ideas, new policies and new partnerships that are needed to mitigate the present crisis by reorienting and restructuring our economies on to a more reasonable, sustainable, balanced and inclusive path. But, however important economics and technologies may be, achieving the required level of global, systemic change will require true political leadership, prophetic vision and courage, as well as a revitalized multilateral governance architecture adequate to meeting the interconnected challenges of the 21st century.

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Is the World Floundering or Has She a Vision?

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Abstract

To all appearances the world seems to be floundering without leadership, direction or even a clear formulation of goals and processes. Yet, paradoxically, amidst the apparent chaos and confusion, evolutionary patterns of advance somehow seem to emerge, universal values become ever more prevalent and powerful as deep drivers and determinates, a more than conventional wisdom seems to guide situations where conventional wisdom is stymied or blinded by dogma and superstition, and susceptible ignorant masses sooner or later choose a course that leads to the future rather than back to the past. This progressive movement is far from steady and often interspersed with retrograde steps and descends into utter folly and vicious violence, but all the same a direction seems to emerge that defies the expectations of scientific projections and doomsday prophets. Despite our adoration of rationality, irrationality prevails even in the halls of knowledge. Bursts of extraordinary creativity follow episodes of suicidal stupidity. Humanity's predilection to self-destruction exists side by side with a serendipitous capacity for creativity and coming to our senses just in the nick of time to avert calamity. Pessimists decry the negative tendency. Optimists affirm the positive. None seem able to discern the pattern or process by which challenges become opportunities and imminent disaster is transmuted into progress. A key to deciphering this enigma lies in the invisible, yet to be realized potentials of the individual and society. This clumsy, costly, painful process is the mark of a still largely unconscious species struggling to discover its raison d'être and the secret of conscious evolution. Utopian ideals discredited by a world disillusioned by false promises exhibit a remarkable regenerative power to advance toward unseen goals. An unrealized vision founded on universal values guides us toward an inevitable destiny we have yet to conceive. Those seed values represent the quintessence of wisdom for humanity's survival, development and future evolution.

Though the two World Wars are long over and the Cold War is also a thing of the past, humanity is still troubled by the fact that nuclear weapons remain with us. *Nor is there any semblance of realistic thinking about global warming or the economic crisis.* In the Fall of 1989, Soviet President Gorbachev and German Chancellor Kohl speculated that it might be decades before German reunification could be achieved. Just two days later, the Berlin Wall fell and their perception of reality was radically altered. Might our view of future possibilities be similarly obscured?

Such instances are not rare in history. In January 1947, wise men in Indian politics wondered whether India would ever become free. In March Lord Mountbatten arrived with

a mandate to transfer power within fifteen months' time. On June 3rd he accelerated the timetable to August 15, 1947, nearly a year earlier than first envisioned.

“What appeared to us as dangers and inescapable disasters acquire new color as opportunities and potentials when we become more conscious.”

What do such incidents tell us? They indicate that the world is secretly alive with a mission and determined course of action, which neither the actors nor the beneficiaries seem to be aware of. Such incidents have taken place in different parts of the world. England became alive with a sense of mission in May 1940 when German war planes raided the British skies. Hitler expected to win the decisive Battle of Britain within a few months. Instead, it was Germany that had to retreat ignominiously. America had a similar experience when FDR assumed power in 1933 in the middle of the Great Depression era. Within a few weeks he ended the US banking crisis, which had led to the failure of more than 6000 banks in the previous three years.

Humanity does possess a vision and responds with gratitude to its realization. We see a leader carefully preparing a speech. Half way through he is inspired to set aside the prepared text and speak extemporaneously, setting out a decisive new vision and new course of action. When hundreds of thousands of veterans assembled from all over Europe to defeat the French revolutionary army, Nature placed the genius of a Napoleon on the other side and radically altered the outcome. Establishing democracy against the entrenched powers of monarchy and feudalism in Europe required the strength of a dictator. So too, crisis is often a necessary condition for rapid social progress. The impending danger of famine in India was averted by the timely awakening of the Indian farmer, who turned a potential disaster into an evolutionary opportunity for growth, making the famine-prone country self-sufficient in food production within five years.

The world's computer experts anticipated a potentially catastrophic Y2K problem at the turn of the new millennium. But the event passed away without a single significant incident. Global awareness and determined preparedness changed the course. Since the last century or more, mankind has been troubled by the specter of rising population. Two hundred years ago, Malthus predicted widespread famine in Europe as population growth outstripped food production, yet global population has grown seven-fold since then and the expected calamity has been averted. This led to the birth of the science of demography, which functions by projections and forecasts. Recently, however, it has been recognized that apart from its negative aspects, population has beneficial aspects also. A new vision is emerging that views expanding population as an asset rather than as a liability. What was once perceived as a burdensome problem is now coming to be perceived as a strength. What appeared to us as dangers and inescapable disasters acquire new color as opportunities and potentials when we

become more conscious. Space and Time that appeared to be absolutes are now viewed as relative from the perspective of Relativity Theory.

The radical changes that have occurred during the post-war years defy imagination. Cyberspace has united the world as never before. After centuries of incessant rivalry and military confrontation, Europe is striving to forge a model for the peaceful union of states similar to that of the USA. Communism has abandoned the illusion of a centralized economy and shifted to free enterprise. Mahatma Gandhi's non-violence that appeared utopian at the time, served as the inspiration for the American Civil Rights Movement and the abolition of apartheid in South Africa. Women have acquired an awareness of their civil and political liberties and are no longer awed by the bondage of marriage. Communists long protested that property is a form of theft which should be abolished. Now a number of billionaires around the world are disenchanted with the unbridled accumulation of property for their children and are actively giving it away for the benefit of humanity. Such incidents are a sharp reminder that the world is not a blindly blundering entity. It is moved by a vision and that movement has a direction.

Man gives little thought to the creative capacities of his own mind. The World Academy's past President Harlan Cleveland reminded us about the subtle creative powers of the mind with respect to ideas. **He made a notable observation that the mind possesses infinite creative power that does not get diminished no matter how much knowledge it gives away.** This illustrates the principle formulated in the *Upanishads* about the powers of Infinity, "Complete minus complete is complete."

So too, society is a marvel with infinite capacity for accomplishment, but we rarely stop to reflect on its remarkable powers. *Language is an ingenious social invention that is not generally appreciated.* Philologists have spent their whole lives trying to understand the nuances of language. The Danish philologist Otto Jespersen excelled even Dr. Samuel Johnson in his study of the English language. Language scholars have stopped short of examining the mystic origins of language. To comprehend society we must try to understand the essence of all social powers and processes.

We can acquire mastery only over things we are conscious of. As long as we do not understand the fundamental principles on which a phenomenon is based, we are powerless to control and harness it. Money is an important instance. It stands as the symbolic power of productive human relationships as expressed in trade. Adam Smith closely examined the principle of division of labor and brought out marvelously its great powers. He also caught a glimpse of the power of money, but refused to delve deeply into the subject and analyze it from first principles. It is time that economists examined the very origins and first principles of Money. There was a time when priests were alarmed by the invention of the telescope and microscope, which they mistook to be instruments of the devil. Today many are alarmed by the adverse effects of the way money behaves. *Money, not knowledge, is the reigning power in the world.* Apart from its symbolic nature, it is also a very creative power.

Over countless millennia, humanity's close observation of physical Nature revealed the secrets of crop production. Agriculture developed when human beings discovered the pro-

found fertility of the soil. *What we call fertility is only another version of creativity.* We can call it the creativity of the soil. It marked a fundamental step in the process of civilization. A greater landmark was humanity's discovery of the creative powers of trade. Trade creates the symbolic power of money, which is the foundation for trust in commercial human relations. In medieval England, the goldsmiths became society's bankers. They discovered the unusual capacity of banks to create money out of financial transactions between people. Physical labor done on farms and in factories produces products and generates money out of those products. Hard-working men were aghast at the sight of bankers sitting at their desks and generating money on the spot. The very notion made them feel cheated. Failing to comprehend the remarkable power of money to multiply, American President Andrew Jackson felt some kind of fraud was being perpetrated and warned the public not to believe in paper notes. Most of the outside world sympathized with him. He had the same mentality as those who disapproved of the telescope, microscope and the theories of Copernicus. There is no historical record of similar opposition to language or to printing, though it would be understandable had there been one.

The world has a vision, but this does not negate the fact that humanity has floundered all through history. We have survived and moved on in spite of our floundering. Unfortunately, it is aggravated by a perceptible tendency to organize misguided wandering into willful insistence on self-destruction. President Jackson's economic 'vision' is only one instance of a recurring trend. Awarding two Nobel Prizes for the development of computerized trading algorithms used in destabilizing financial speculation is another. As Time marched on, Jackson's vision was simply brushed aside and the importance given to money kept on increasing to the point that it has come to possess its creator. As in the case of technology and nuclear weapons, humanity is dominated by its creation.

Although man continues to flounder, the world in general possesses sufficient vision to eventually set on the right course. In spirituality, a decisive visionary moment is known as the Hour of God. We may go one step further and call it *the Hour*. It may even be observed that humanity's insistent floundering over an extended period subconsciously shapes the social vision that proves infallible. This has been occurring in all areas of life and the floundering and vision oppose one another very much as a play of light and darkness.

Humanity fought the First World War as the "war to end all wars". In fact, it became a huge cataclysm that brought the world to the brink of disaster. Yet, it led to the birth of the League of Nations and was accompanied by a rise in world public opinion against warfare. Meanwhile, Hitler prepared Germany for unprecedented aggression, and Britain blindly ignored the threat until war once again broke out. Churchill's attempts to raise an alarm in the British Parliament evoked derisive laughter in the government. Prime Minister Chamberlain flew to Germany to make lasting peace with Hitler and announced to the world that it would be a durable peace. His cabinet endorsed his announcement with full approval. Chamberlain rejected proposals for strengthening the armed forces on the grounds that there was no money for such expenditure. He went a step further and said that his cabinet would sanction money only for programs promoting prosperity. *Hitler grossly betrayed the trust Chamberlain had reposed in him and launched a blatant war of aggression.* The resulting

aggression by the Axis Powers was so powerful that most Englishmen believed surrender was the only option. The world appeared to flounder in the face of this aggression. But the strength of English resistance was grossly underestimated by Hitler, who expected the Battle of Britain to end in a German victory within a few months. He failed to understand how deeply England cherished its liberty and was determined to preserve it. Having lived for nearly a millennium under foreign rulers, Britain valued freedom too much to relinquish it. In spite of the vast superiority of German airpower, it was Germany that had to retreat within a few months, not the British.

“The world’s vision is founded on universal values that often appear as unrealizable, utopian ideals, but their power to move events is real and their progressive realization is inevitable.”

The world values Freedom. Humanity’s march toward freedom may be slow and circuitous, but it is inexorable. Over many centuries, the world has been organizing itself in greater freedom. Freedom is supported by Life. The energy and power generated by freedom enabled the descendants of the American settlers to establish hegemony over the world in a few centuries, surpassing the power acquired by European civilization over a millennium. The French Revolution awoke dazzling hopes of a better future that united broad sections of the population with revolutionary idealism, mythical in character, generating new ideas, energy and initiative. The world has a vision of its own. It does not honor those who blindly grope. In WWII, people who valued freedom were stirred to act, new leadership sprang up, the notion of surrender was abandoned, England responded, the world was saved from military tyranny, democracy came into its own and began to spread. Forty-six democracies were born at the end of the war. Freedom was later extended to over a hundred nations. The Second World War was followed by the founding of the UN and then the EU. War eventually became unthinkable among European nations that had been engaged in incessant warfare for many centuries. *The world’s vision is founded on universal values that often appear as unrealizable, utopian ideals, but their power to move events is real and their progressive realization is inevitable.*

Humanity is conservative by nature and loves to repeat what it has learnt, whether it be right or wrong. Man founds a new religion and works hard to spread it all over the world. But his innate conservatism asserts itself and he starts governing the organization in a way that negates the very ideals of the religion itself. Such atavism is characteristic of the way humanity relates to religion, politics and economics. This is an example of floundering which destroys the very institutions created to serve a higher purpose.

The world’s vision expresses itself through such things as the emergence of the Hippy movement, calls for social equality, glasnost and perestroika, etc. Whatever may have been the result of these movements, one solid achievement has been the spread of freedom. The Berlin Wall did fall, liberating East Germans from authoritarian rule and paving the way for the spread of democracy in Eastern Europe. Rosa Parks, the African American woman from

Montgomery, Alabama, who asserted her right to social equality, did live to see the African American community acquire a greater measure of civil rights.

Humanity is creative. It has created more than one civilization. When threatened with extinction by an exploding population, society does rise to the occasion and act, as India ushered in the Green Revolution to avert famine in the 1960s and as the superpowers finally stepped back from the brink of catastrophe to end the Cold War. Greece destroyed itself, but was replaced by Rome. The Roman Empire declined but eventually gave rise to the Renaissance, Reformation, Enlightenment, and the rise of democratic values. The remarkable invention of agriculture, which formed the basis for the growth of sedentary civilization, was followed eventually by the wonders of industrialization and a twelve-fold rise in real living standards during the past two centuries. Whatever its pitfalls and dangers, industry now rules the world. The modern money-based economy is its direct offshoot. If material comforts were alone an index of civilization, then we would have to say that humanity today is far more civilized than ever before.

Now and then the world generates a great burst of expansive, creative energy of one type or another and makes a striking advance. Great ideals lie at the root of each such forward movement and are the source of its impetus. At the same time we find a recurrent tendency for retrogression, an incessant urge to go backwards and undo the gains of progress, such as the recent return of power politics and Cold War rhetoric in international relations. The misuse of the power of money is playing that role today. Climate change presents imminent danger. The danger from nuclear weapons, for long thought remote, reemerges as a real and present danger.

We must strive to precisely discern the nature of our problems in order to overcome them. The Great Depression presented a new type of economic problem. The problem was no longer a scarcity of supply. An abundance of productive capacity met with a paucity of demand because of concentration of wealth and limited distribution of purchasing power. Confronting a problem for the first time requires original thinking. FDR solved it by going back to the first principles of productive prosperity. Since then the world has experienced unprecedented prosperity combining convenience and comfort.

When Nehru became India's first Prime Minister after Independence, he wanted to quickly achieve the levels of prosperity prevalent in the West, but there was no past precedent from which he could borrow for a planned initiative to develop a democratic nation so rapidly. The spectacular but partial progress of USSR through dictatorship was not suitable for Indian democracy. The problem Nehru faced required an original approach. He sought quick results without the necessary knowledge. His efforts reflected a deeper truth. That truth is that man accomplishes first and learns only later to understand the process. Such learning comes from intuition or insight, not reason. C. Subramaniam, India's Minister of Food and Agriculture then, was a farmer endowed with that knowledge. He applied it to launch India's Green Revolution. His accomplishment was more a result of intuition than rational understanding.

Another method for accomplishment is to do the right thing, as Churchill did in 1940. It saved England and Europe for democracy, while depriving Britain of her wrongfully held

overseas possessions. Gorbachev achieved a similar result. The Indian leadership might have obtained equally dramatic results had they exhibited the right conviction. The right conviction for India was the complete readiness to rise up in arms to secure independence based on self-respect and the legitimacy of self-defense against a dominant aggressor. Had her faith been in the force she naturally possessed, she could have avoided the country being partitioned and the half century of regional conflict that followed it. Rather than taking a doctrinaire position, she would have also been prepared to recognize the threat posed by China's growing military strength, which so shocked her when it attacked in 1962. *The Non-Aligned Movement that elevated Nehru to global prominence could have raised both Nehru and India to the highest stature in international affairs.* In spite of this, a permanent seat in the UN Security Council was given to India, but offered by Nehru to China with his characteristic magnanimity. It turned out to be a very serious mistake that did not serve the purpose. China later turned into a hostile aggressor, compelling India to abandon its non-aligned policy.

The end of the Cold War opened up two new possibilities: the abolition of nuclear weapons and making the UN a truly democratic institution by abolishing the veto power of the five permanent members of the Security Council. Both these possibilities were missed in 1991, either due to lack of alertness or lack of proper equipment. The US was the UN's most dominant influence during this period. She achieved that eminence by vigorously championing the end of colonialism and imperialism, which the UK and other colonial powers long resisted. She was also rich and strong. Leadership requires strength, but that *strength needs to be combined with some type of idealism.* The UK and USSR failed to qualify for leadership on that ground, while the U.S. rose to the top. Even her qualification was limited by continued denial of full civil liberties to African Americans. Her financial assistance to European nations through the Marshall Plan was not entirely altruistic. It was conditional on their political support, which fostered dependence and subservience. The USSR attained superpower status in spite of authoritarian rule, mainly because she rejected aid in favor of self-reliance. The US was not intrinsically qualified to champion the abolition of nuclear weapons, because many of its leaders believe in the value of these weapons. Moreover, her campaigning for abolition of nuclear weapons was vitiated by refusal to abolish the right to carry hand guns domestically. America could not resist the urge to drop nuclear bombs on Hiroshima and Nagasaki, nor to lay waste Vietnam by devastating conventional arms. One cannot lead a cause based on diametrically opposing attitudes. The abolition of nuclear weapons is a vast universal ideal signifying humanity's shift to the mental plane from the physical plane that believes in violence.

The higher the ideal, the greater the impact of even smaller expressions of it. Mahatma Gandhi's call for Indians to refuse to pay the salt tax shook the British Raj to its very roots. The simple refusal of Rosa Parks to move to the back of the bus was enough to engulf the US in civil rights protests. *If this principle were not true, a single person such as Churchill could not have saved the whole world and FDR's fireside chats with practically-minded Americans could not have persuaded them to redeposit their life-time savings into a failing banking system.* The victory of Napoleon's army against a much larger coalition of forces at Austerlitz is further evidence of this principle. A small significant event can have a hugely

disproportionate impact on the world, provided the initiator is totally sincere to the principle expressed. In Austen's novel *Pride and Prejudice*, a small but significant decision of Mr. Bennet and acceptance of what was obvious by the heroine Elizabeth proved powerful enough to change the course of the story and catapulted the family to heights of wealth and status they never envisioned.

“Honor human beings in this century of the Individual, respect society for its greatness, guarantee people's fundamental rights, and economic crisis will disappear.”

The Communist Manifesto was published in 1848 and *Das Capital* in 1862. It was widely believed that they would lead to a proletarian revolution in England or Germany, the two most industrialized nations. To everyone's surprise, it occurred in Russia instead, where the proletariat was miniscule in number. That became possible because the exploitation of the working class was most cruel there. By 1900 socialism had won universal admiration. Two Socialist Internationals had been conducted and European governments were unnerved by the threat of the socialist menace. Working conditions were improved to avoid revolution. Such positive efforts did moderate the demands of restive workers. America was a land of free enterprise. The younger generation was motivated by a spirit of entrepreneurship, and strongly opposed communist dictatorship. FDR felt that the Sears Catalog was a fitting reply to the Communist challenge. The salary of US auto workers far exceeded the salaries of laborers in Socialist Countries. Americans served the cause of Communism more effectively through their capitalist economy than did the socialist economy of USSR. The vision of humanity realizes itself in unexpected ways.

In the Indian epic *Ramayana*, the hero Rama confronted an adversary who had won a boon that gave him half the strength of any enemy who opposed him. The story depicts ancient knowledge that we energize the enemy by opposing him, as the USA and USSR energized each other to the ridiculous extent of producing 70,000 nuclear weapons through decades of mutually assured destruction. Martin Luther circumvented this principle by founding a whole new religion rather than trying to battle the irrational superstition of the Catholic Church head on.

One important aim of European science was to replace superstition with rationality and it made remarkable progress in doing so. The very word “scientific” has come to be regarded as synonymous with rationality and truth devoid of superstition. But superstition survives even the rise of modern science and returns in new disguise. It survives in the form of authority, tradition and seniority that resist rationality, independence, original thinking, even within institutions of science and academia. Over time science has ousted religion and replaced it on the throne of social status. The scientist has become the hero, the ideal. All thinking must now be ‘scientific’ – a most laudable aim. Unfortunately, in the process, science as a human undertaking has come to function on the basis of authority and self-interest, rather than on the basis of pure rationality. A former President of an academy of sciences appreciating the

views spoken by a much younger man, expressed the wish that these ideas be spoken by some famous scientist, for only then they would receive the attention they deserve. British biologist Rupert Sheldrake conducted innumerable experiments and submitted documentary evidence to support his theories. In response, an editor of *Nature* refused to even examine the evidence, because it challenged established theory in the field. As capitalism has adopted the methods of communism to combat its opponent, science has unwittingly succumbed to the very disease it chose to fight.

The wider the perspective, the more rational. Rejecting contrary views implies rejecting aspects of a greater truth. The current conflict between neoliberalism, Keynesianism and ecological economics tends to overlook the fact that all three represent valid aspects of a greater truth – freedom for individual initiative, regulation to promote equity and protection of the environment are not opposites. Rather, they are all essential aspects of a complete formula for sustainable development. Specialization of science has not only led to fragmentation of disciplines, but also to organization of non-facts into valid theories. Employment is part of economics and economics is part of society. If economics is studied as an integrated dimension of society, not in isolation as a collection of statistics, there will no longer be any unemployment. *Honor human beings in this century of the Individual, respect society for its greatness, guarantee people's fundamental rights, and economic crisis will disappear.* There is no virtue in being irrational or superstitious. Science has the value of being rational and true. The problems of the world are of self-inflicted blindness, like the six blind men who sought to describe the elephant in a bygone era.

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Preventing Hell on Earth

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Abstract

To fulfill its mission a human-centered paradigm as envisioned by the World Academy of Art & Science should combine optimism with pessimism. An essential meta-value is avoiding the bad, in addition to achieving “the good”. Realistic assessment of human beings is a must. An appropriately phased time horizon of 10 to 80 years should frame the paradigm. Evaluation of emerging science and technology with very dangerous potentials, such as those posed by synthesizing viruses and radical “human enhancement,” followed perhaps by human cloning and deep genetic engineering, is essential. Thinking ahead realistically on alternative futures of the human species as a whole and their drivers is a must, giving due weight to dangerous propensities as well as virtues of human beings.

Only a small minority of humanity and its political leaders have the understanding essential for coping with fateful choices increasingly facing humanity. Inter alia essential is the regulation of dangerous research and technologies enforced by a strict global regime headed by a duly constituted circumscribed global authority. An upgraded genre of political leaders within redesigned democracy is essential. No human-centered paradigm should ignore such requirements.

All this lead to my suggestion to focus the paradigm on the most important and urgent, what Dag Hammarskjöld appropriately called “Preventing Hell on Earth”.

1. Introductory Note

This essay is a contribution to discourse on a human-centered paradigm, or set of guiding principles. It is largely based on my books *Avant-Garde Politician: Leaders for a New Age* (2014) and *The Capacity to Govern: A Report to the Club of Rome* (2001), which also detail most of the sources on which the present paper is based. But this essay focuses on “Preventing Hell on Earth,” including averting self-destruction of the human species, which is at the center of concerns.

2. Realistic Vision

The conceptual framework for a human-centered paradigm, which is being developed by WAAS, aims at guiding action directed at assuring, as far as humanly possible, a better future for humans and humanity as a whole. Accordingly, it belongs to the category of “realistic visions,” in partial contrast to “realistic” in the narrow incremental sense of “the art of the possible,” but also in contrast to counter-factual utopian visions.

To fulfill its action-guiding aims, a realistic vision must meet three main criteria: (1) directed at well-considered and explicated values; (2) accepting constraints imposed by rigid features of reality; and (3) dealing with clarified time horizons phased according to the natural time cycle of the relevant issues.

It seems to me that the WAAS discourse on a human-centered paradigm meets the value criterion of advancing “the good” as accepted by the best of contemporary moral discourse and global declarations. But it misses an essential meta-value, namely avoiding the bad as distinct in many respects from achieving “the good”, despite some logical and operational overlaps. Also, most of the discourse ignores very vexing issues of judging what endangers the welfare and perhaps existence of humans or enhances them, including emerging technologies which will be useable both for the better and the worse. Artificial Intelligence (AI in short), synthetic biology and human enhancement illustrate such domains of science and technology in respect to which salient values are missing or at best underdeveloped. The question to what extent and under what conditions novel science-and-technology provided processes and tools is likely to advance human welfare or endanger it, and what to do about it, remains wide open.

Also missing is an overriding imperative which guides specific human-serving values and helps to establish action agenda. “Preventing Hell on Earth,” with a continuously developing scope, is proposed as an overriding imperative, as expounded in this essay.

Moving on to the “realistic” aspect, I have grave doubts on crucial assumptions concerning human beings, as well as unavoidable power structures, which nearly all discourse on a human-centered paradigm takes implicitly for granted. These are discussed below.

Furthermore, as far as I understand the publications and declarations dealing with the human-centered paradigm, the time horizons dealt with are not clarified. This undermines their essential realism by permitting “mental time travel” into undefined futures which are far beyond maximum foresight abilities, and thus make the vision, at least in part, more an exercise in fantasy than creative but action-oriented contemplation. Therefore, I start my substantive discourse by proposing a phased time horizon.

3. Phased Time Horizon

The time horizon which I suggest for the paradigm is between the near future, say ten years, and a maximum of about eighty years, divided into phases as fit specific domains under consideration.

Publications on expectations for the 20th century written around the end of the 19th century were completely wrong. All the more so, outlooks presuming to cover the rest of the 21st century are at least very doubtful and most likely largely mistaken, because of the accelerated rate and steeper degree of non-linear and contingent change, and also some phase-jumps, adding up to the beginnings of a largely opaque metamorphosis of the human condition.

Still, an effort, however provisional, to engage in thinking about the future, preferably in the form of more or less possible and in part likely “alternative futures” and their drivers, is

of critical and perhaps fateful importance, because of emerging dangers in addition to novel opportunities that require proactive creative adjustments, most of which have to be radical rather than incremental.

Cascading into metamorphosis with habits, institutions and frames of mind largely fixated on rear mirrors is very dangerous. But dreaming of a never-never future will not help. Therefore, I adopt a time horizon long enough to encompass radical transformations foreseeable in part as in-between possible and likely (to use multimodal logic terminology), but short enough, taking into account the longer life expectancy of humans, not to get lost in too much speculations. Thinking and acting in time frames of between about 10 and 80 years probably meet more or less these criteria.

Even within this relatively short time horizon range, presently “inconceivable” events and processes are likely, resulting in harsh transition crises. Gearing up for them and for using the crises as opportunities for necessary radical innovations which are not feasible without reality-undermining events is essential and should be included in all human-centered paradigms. Thus, a mass-killing conflict using mutated viruses may clear the way for setting up a strict global security regime.

However, a longer time horizon is a must when we move from a human-centered paradigm to a human species-centered paradigm. This adds the long-term imperative to prevent any action that endangers the very existence of the human species, together with being very cautious about human enhancements that may change basic features of the human species.

Emerging technologies are likely to provide tools that may result in the end of humankind in one way or another (as studied, *inter alia*, at the Future of Humanity Institute, Oxford University), in addition to the continuing possibility of nuclear self-destruction and escalating damage to the environment. Therefore, I suggest that these imperatives be added with absolute priority to any human-centered paradigm.

4. Rigid Realities

I have serious doubts about underlying assumptions on human beings on which the proposed WAAS paradigm seems to rely, however un-explicated. As a mood-setter, let me take up for a critical look a widely accepted recommendation which illustrates dangerous neglect of stubborn facts that should be regarded as rigid, at least within the proposed time horizon.

The idea of a global parliament elected democratically is often discussed as if feasible in the foreseeable future. But to demonstrate the illusionary nature of such thinking for at least the next 80 years and probably much longer, it is enough to mention the demographic fact that a global body elected according to the democratic principle of “one person-one vote” would be completely dominated by a few Asian countries. China, India and Indonesia alone add up to about 40 percent of humanity! This clearly would not be acceptable to most of the global powers, rightly so given present and foreseeable states of being of large parts of humanity, in addition to undermining the pluralism of composition in terms of civilizations needed in a global parliament.

Mobilizing massive grass-root support for measures essential for the welfare of humans is important and perhaps essential. Both limitations on nuclear weapons and on climate changing activities have benefitted from bottom-up pressures, however inadequately so. But most of the emerging dangers to humans and the species as a whole are very complex, as are the required countermeasures. Thus, the potential dangers of AI are hotly debated and what can be done about them is far from clear, all the more so as AI can provide enormous benefits for humankind. The same is true, *mutatis mutandis*, for synthetic biology and, most challenging of all, for human enhancement.

It is hard to imagine that large parts of humanity will understand the complexities of such domains, which tax to the utmost the capacities of the minds of outstanding philosophers, scientists and other highly qualified thinkers. Mass petitions and referenda on them cannot therefore make sense within the proposed time horizon. This illustrates critical issues on which only a very small percentage of humanity can express plausible opinions; and, much worse, on which politicians who lack any real understanding of the issues and what is at stake, will have to make decisions impacting on the future of generations to come.

Critical for crafting human-centered paradigms are foundational assumptions on human beings. In particular, it is very dangerous and perhaps fatal to base a realistic vision on much too optimistic views on human beings while ignoring or underrating dangerous propensities built into them, as revealed throughout history and exposed by many psychological and sociological studies.

Without underrating the great importance of altruism, artistic creativity, advances in widely accepted humanistic values and other achievements of humanity over its history, which has its own ups and downs, let me focus on seven examples of very disturbing cardinal proclivities of the vast majority of human beings, as individuals, groups, and societies:

1. Human beings have the dangerous propensity to regard it often as their moral duty to kill other humans, and also sacrifice their own lives in order to do so. "True believers" and fanaticism demonstrating this propensity are an integral part of human history and show no sign of disappearing or at least abating.
2. Human beings seek power and superiority, wanting to be the "chosen" and "special," while being envious of others who do so and often hostile towards them.
3. Greed for more of what one or others like is a very strong attribute.
4. Tribalism, in the sense of distinguishing between "us" and "others," frequently accompanied by hostility to different "others", is widespread.
5. Humans seek leaders, look up to them, and follow them in doing good and often evil.
6. In collectives, mass psychology phenomena take over, many of them full of dangerous potentials. Hopes that social networks and other internet collectives will reduce collective vices have not been realized, the opposite being just as likely.
7. Even the most "civilized" of groups and societies seek "enemies to blame" and show signs of barbarism when put under pressure. The reaction of some of the European

countries regarded as the most liberal of all to influx of Moslem immigrants is just a relatively small indicator of how thin the veneer of “civilization” often is.

I do not presume to go in this short essay into the deeper layers of such features and their causes, as discussed, but not satisfactorily explained, by evolutionary psychology, genetics, depth psychology and so on. Most probably they are “animalistic” features built into humanity by evolutionary processes, which can also metaphorically be viewed as a kind of “original sin”. But one point needs emphasis: efforts to change such basic propensities into what is regarded in different periods and places as “better” ones by education have not proven themselves. Even totalitarian efforts to produce a “new human being” have failed dismally.

It would be too pessimistic to conclude that dangerous human propensities are immutable. During about 800 to 200 BCE there occurred in China, India, and the Occident the so-called “Axial Age,” which transformed human self-understanding and transcendental views in ways still dominating most civilizations. It may be that a Second Axial age is in the making, driven by the capacity of humanity to destroy or transform itself, hopefully together with future peak value creators, transforming relatively rapid human self-understanding for the better, though this is far from assured. But this is too much of a speculation to serve as a basis for a new human-centered paradigm.

Alternatively, “human enhancement” by chemicals or genetic engineering, with all its dangers, may enable “reengineering” which reduces dangerous human propensities, though the risks of doing so are surely very high. But as long as human propensities are as they have been throughout the history of the species, and as they surely will be within the proposed time horizon and probably for much longer, all proposed paradigms must take them seriously into account. This is not done in most human-centered paradigms, which therefore suffer from a lot of “wishful thinking” which makes them at least partly into nice utopian fantastic visions but not reliable foundations for action.

5. Priority To Preventing Hell On Earth

The considerations above lead to the need for much humility in proposing human-centered paradigms, which should limit their ambitions and concentrate first on what is most important. Accordingly I propose as a top priority for human-centered paradigms what **Dag Hammarskjöld** called “**Preventing Hell on Earth.**”

Human history is full of examples of “Hell on Earth,” which has taken the forms of mass slaughter, slavery, extreme deprivation, forced conversion and also eliminationism. Luckily, as mentioned this is only one side of the ledger. Altruism, cultural and scientific-technological creativity, rising standards of human development and progress in acceptance of some humanitarian values also characterize human development. Therefore there is hope that human history may be “progressive” in some sense and will spontaneously produce a better world, aided by selective human interventions and, unavoidably, also be very painful transition crises. But this is far from certain, dismal futures being not less likely.

Still, one might feel relatively sanguine about the future of humanity were it not for some drivers of the future which are very likely to increase Hell on Earth unless counteracted with quite stern and in part painful measures. Paradoxically, it seems that despite all their enormous blessings it is science and technology which are the likely drivers of more Hell on Earth, accompanied by malignant value transformations driven in part by disruptions and crises caused by them.

Let me provide a few illustrations:

- Synthetic biology and soon quantum biology will enable engineering of viruses, including mass-killing ones likely to be used by fanatics or to get loose by accident. Comparable in results, autonomous killer robots are likely to become widely available, taking in part the forms of drones that easily reach everywhere, enabling targeted assassinations and also impersonal mass slaughter.
- AI-equipped robots together with molecular engineering will break contemporary employment patterns leaving most of humanity without “work” in contrast to all of human history. Even if economic consequences are mitigated by minimum assured income and a basic universal personal allowance, the results of mass leisure time are unknown. Hopes that it will be used for cultural creativity, or at least harmless virtual lives on computers, have no stronger basis than apprehensions that with more time to think on the certainty of death humans will seek beliefs providing contentment and meaning to life, which may well be in part fanatic ones.
- “Human enhancement” may prolong high-quality life expectancy, but may also enable production of super-humans devastating all ideas of human equality. Super-warriors may increase mass killing. And, should life be synthesized artificially, basic religious beliefs and many values based on “human dignity” may be undermined, together with other inconceivable moral and immoral consequences.

Even under very optimistic assumptions, serious and in part probably quite catastrophic transition crises are probably unavoidable. As shown by historic case studies, such crises and their accompanying traumas, disorientations, and “feeling of being lost” and having no control over one’s life, tend to produce new value systems, often aggressive ones which “seek the guilty.” These, in turn, increase the likelihood of mass-killings using new slaughter technologies creating more Hell on Earth.

6. Essential Counter-Measures

Given the growing potential for more Hell on Earth, effective counter-measures are a must. They are all the more essential because what may be at stake is not only the welfare of humans but the very existence of humanity as a species. Enough to consider the low probability but fateful impact of a sect believing that humanity should be eliminated so as to let “nature” and “Mother Earth” take over, and of such a sect including an outstanding bioengineer synthesizing a virus likely to kill most of humanity, in order to realize that stern counter-measures are essential. Less fateful but still disastrous “Hells on Earth”, quite likely

to come, can be handled with less extreme measures. But fatal contingencies endangering the survival of the human species must not be ignored in any human-centered paradigm.

Let me add an example of a very problematic plausible possibility, though probably beyond the proposed time frame: Humanity may develop the capability to “create” a Homo superior species, even if long-term consequences are inconceivable and may include elimination of Homo sapiens in its present forms. This illustrates that, thanks to human ingenuity in science and technology, what was considered as impossible may become a real option, but an option which human values, institutions and leaders as now constituted, and also most of the reforms being proposed, are totally unqualified to consider seriously.

Returning to my time horizon let me illustrate some essential measures of what I call ‘humanity-craft’ (in distinction from “statecraft”) for taking care of what is critical for “raison d’humanité” (overriding *raison d’état*) focused on preventing Hell on Earth.

- Limitations on research and technologies that can be used for mass-killing and related atrocities, and on the diffusion of their findings and tools.
- Inhibition of “prophets” and other leaders advocating acts producing “Hell on Earth”, such as attacks on “non-believers”.
- Restriction of possession of mass-killing instruments and other means of large scale violence to global authorities subjected to strict supervision.
- Arbitration and, if necessary, imposed solutions of intractable conflicts which have the potential to produce “Hells on Earth.”
- Obligatory transfer payments between countries and a global progressive capital tax to help eliminate extreme deprivation worldwide.
- Global surveillance to identify humanity-endangering activities, while otherwise preserving privacy.
- Universal obligatory two or three years of “humanity-service” by all 18 to 22 year olds, to help and build a global sense of communality.

To be added, as mentioned, is extreme caution on human enhancement, with much more attention given to it than in most discourses on a new human-centered paradigm. At the very least, and as a preliminary step, strictly enforced global regulation of all human enhancement research and activities is essential, together with prohibition of work dealing with explosive subjects such as human cloning, till a widely agreed global ethical code on human enhancement can be formulated and strictly enforced, subject to periodic revisions.

7. Enforcement

Such essential measures require imposition of laws, rules, regulations, transfer of resources and surveillance, often on the unwilling. Therefore what is needed is the establishment of a circumscribed global power structure able to enforce essential measures, subject to strict oversight against misuse.

Let me emphasize: willing compliance cannot be relied upon. Scientists may agree to follow an impressive code of professional ethics, but a few are sure to break it. Countries may sign a global covenant to follow agreed humanity craft norms, but some of them are likely to secretly seek an advantage by developing powerful mass killing weapons or dangerous high-value technologies. Companies may agree not to market risky knowledge and tools, but some are sure to seek an extra profit by doing so. Therefore, an effective global enforcement regime is essential.

In the best of cases the essential global enforcement regime will be headed by bodies reflecting (but not representing in the democratic sense) main civilizations, continents and states, and will enjoy broad grass-root agreement. But, unavoidably, within the postulated time horizon only a Global Authority composed of the main powers, headed by China and the United States (I put them in alphabetic order) may become feasible – probably as a result of substantive but hopefully not too devastating calamities.

With time the Global Authority can and should be based on a coalition of the willing, in line with Kant's Perpetual Peace proposals. And, in a future beyond the proposed time horizon, a more representative composition of some organs of the Global Authority should be instituted, including some experimentation with novel approaches – such as selecting globally members of an organ, advisory at the beginning, by lot, so as to reduce the prevalence of power-hungry manipulative low-grade politicians. But this is far beyond the proposed time horizon.

Neither obsolete conceptions of sovereignty and equality of states, nor resistance by the unwilling, whether states or non-state actors, nor grass-root opposition must be permitted to hinder establishment of the required Global Authority, and effective action by it. Measured but decisive application of force by the Global Authority, after due warning, to enforce main humanity-craft measures globally is essential. Reliance on good will, public pressures, bottom-up support and so on, however desirable, is an illusion unless backed by overwhelming enforcement.

8. Upgrading Political Leaders

Proposals to reduce the impact of the few on the future of the many are another of the delusions accompanying parts of the deliberation on a novel human-centered paradigm. Leaving ways to achieve such a transformation of human societies to some unspecified *deus ex machina* adds nothing to the credibility of such ideas.

Unless a quasi-anarchistic form of living together can be designed for the billions of humans populating the world, which is very unlikely for Homo superior though perhaps possible for a hypothetical Homo superior, power hierarchies, with all their dangers, are essential for maintaining safety, law, justice and other conditions of civilized existence and for overall thriving of large scale civilizations.

Throughout human history, very few persons had much impact on the future of multitudes, in art, science, the economy, war and peace, religions and ideologies, and governance.

This is sure to continue, at least within the proposed time horizon and very likely for much longer. But a crucial question must be faced: who among the relatively very few shaping large parts of the future of the very many have the legitimacy to do so, especially with respect to radically innovative and necessarily controversial humanity-craft measures. The answer, for better or worse, is “political leaders.” It is political leaders who are the extremely few, within the very few who impact most on the future of humans, who, despite all their dangers, are crucial for preventing Hell on Earth.

“To avoid catastrophes, including much Hell on Earth, and to increase the likelihood of pluralistic human thriving, it is absolutely essential to assure a much higher level of moral, mental and volitional qualities of political leaders.”

This is not only a stubborn fact. In terms of political philosophy only duly selected political leaders have the legitimacy and also duty, within elaborate safeguards, to make the humanity-craft critical choices impacting most on the future, including preventing Hell on Earth. Their freedom in making decisions is shaped and limited by a variety of social actors. But, still, political leaders are the agency having very large and often determinative weight in impacting on the future, as far as depending on deliberate human choice.

However if we ask ourselves if political leaders as presently constituted are qualified to make such choices wisely the answer is a loud and clear “No!”. With single exceptions, they are clearly very underequipped morally and cognitively to do so.

This leads to a far-reaching conclusion: To avoid catastrophes, including much Hell on Earth, and to increase the likelihood of pluralistic human thriving, it is absolutely essential to assure a much higher level of moral, mental and volitional qualities in political leaders.

Therefore, I find the lack of attention to the fateful importance of politicians and the need to upgrade radically their qualities in nearly all discourse on human-centered paradigms not only disturbing but very dangerous. No talk and no day dreaming will make politicians less important for shaping the future within foreseeable time horizons. On the contrary, because of the increasingly critical and also fateful potent of many collective choices, political leaders are sure to become more important as future-impacting actors. Ignoring them because much of actual politics causes nausea is understandable, but inexcusable. It imperils the future of humanity.

This leads to the key question of what can and should be done to significantly upgrade salient qualities of political leaders. While my writings include a number of concrete proposals, they are inadequate. Available literature, as far as I have checked, includes even less. Clearly needed is focused creative thinking on ways and means to upgrade political leaders. WAAS and related groups, such as the Club of Rome, should set up a number of “thinking groups”, with carefully selected membership having diverse life experiences,

multidisciplinary knowledge and pluralistic creativity, to ponder ways to upgrade the quality of political leaders worldwide, in private without premature mass media exposure. At the same time all public discourse on human-centered paradigms and related subjects should have on its agenda as a central theme the need to radically upgrade the quality of political leaders, so as to build up public support for concrete action when good ideas on how to do so and opportunities to realize them emerge.

“The prime responsibility for being a high-quality political leader and developing necessary qualities is yours, not that of your genes and environment.”

To stimulate such endeavor, let me shift gears and conclude with some relevant ideas in the form of a Code of Ethics for Political Leaders (excerpted, with some changes, from my book on avant-garde politicians).

But, first, let me emphasize that spiritual leaders are not less and often more important, though in other ways. They require separate consideration, which is beyond the scope of this essay.

9. Code of Ethics for Political Leaders

1. Regard being a political leader as a calling, destiny, mission, and engagement of central importance for all of your life and personality. Preventing Hell on Earth and creating a better future for humans worldwide are at the core of your extra-ordinary mission, together with the ordinary missions of political leaders at your time and place. In particular, the extra-ordinary mission makes your political leadership into an exalted endeavor of profound significance. It is far better to resign or lose your position than betray it.
2. Your missions require outstanding qualities. Their constant development, evaluation, and upgrading are an absolute duty of yours. This requires constant soul searching, permanent learning and a lot of contemplation, much of which is possible only when you are alone.
3. As a political leader, you are constantly exposed to many corruptive influences and temptations, mainly stemming from possessing power. All the more so, you must engage in constant self-monitoring and self-restraint, however demanding and painful they may be.
4. In all activities relating to your missions do not let personal considerations intrude.
5. Behave in your personal life in ways fitting a political leader in accordance with the higher standards of morality accepted in your society, without claiming “privacy” rights and personal privileges not necessary for your missions.

6. The strictures above apply also to your family. All of you have to be above suspicion.
7. Your mind is what makes you a political leader. You should focus on it and its upgrading so as to acquire and constantly improve its core qualities essential for your missions. Remember, the prime responsibility for being a high-quality political leader and developing necessary qualities is yours, not that of your genes and environment.
8. Pondering, deciding and acting are at the core of political leadership. Focus on them instead of trivia.
9. A critical facet of your mind is your conscience, including your values with special attention to *raison d'humanité*, as adjusted to your concrete circumstances as evolving with time, in part as a result of your endeavor. They should operate as a kind of “second self” in your mind, what Socrates called his daimon, whom you constantly consult.
10. To acquire and maintain the power essential for your missions you have no choice but to behave according to a public interest version of Machiavellianism. But you have to keep such behavior to the essential minimum and take great care not to enjoy it.
11. You are a social animal largely shaped by your location in time-space. But you can and should strive for maximum autonomy of your mind, as needed for thinking and acting as an innovative political leader.
12. You are duty-bound to engage in your missions to the best of your ability and on your responsibility. You should take public opinions into account on their merits, but not be enslaved by them.
13. Have the courage of your convictions, willingly risking your position and also your life if this becomes essential for your missions. “*Here I stand, I cannot do otherwise*” is the principle which should guide you in your mind and behavior when critical issues are at stake.
14. If illness or other causes impair your qualities as a political leader, as judged by your physicians and spiritual advisors, you have to leave your position, temporarily or permanently as the case may be.
15. If for political reasons you cannot implement critical parts of your missions you should resign rather than cling to power.
16. Do not let your family, friends, and acquaintances interfere with your missions. Resist and reject any emotional pressure they may put on you.
17. Be very careful while selecting knowledgeable and reliable advisors and encourage them to remonstrate with you. Seek ideas from creative persons. Consult on difficult moral dilemmas were carefully chosen spiritual advisors, however called. But insist on confidentiality and keep away from those engaged in much ego-promotion.
18. Consider carefully the many tragic choices you face, but do decisively what is necessary to prevent Hell on Earth and improve the state of humans.

19. Accept full responsibility for your errors and failures, by feeling and showing shame, and making a maximum effort to draw lessons from them.
20. Learn from criticism directed at you, without hostility towards the critics.
21. You should do all you can to influence other political leaders to improve themselves constantly and to accept prevention of Hell on Earth and improving the state of being of humans worldwide as an extraordinary mission, in addition to their ordinary missions.
22. It is your absolute duty to act against evil politicians and get rid of them.
23. Cultivating political leaders for the future is an important task of yours, both while you are in office and afterwards. Remember that you can die or be incapacitated without advance notice, so mentoring worthy successors should not be delayed.

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Uncorking the Future: Transitions to a New Paradigm

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Abstract

This article explores issues discussed at three recent WAAS events regarding the process of transition to a new paradigm. The prominent institutions and policies governing the present paradigm are founded upon a bedrock of ideas and values and an abstract, reductionistic mode of analytic thinking detached from people and social reality. Escape from the present blind alley and transition to a new paradigm require adoption of a different way of thinking that is human-centered, value-based, inclusive and synthetic. The multidimensional challenges confronting humanity today are the consequence of precious opportunities missed at the end of the Cold War. At the same time the awareness and energy released by these challenges has the potential for converting current challenges into unprecedented opportunities for progress at the global level. The outcome depends on our capacity to discover the complementarity underlying apparently contradictory, opposite viewpoints. Multi-culturalism is at once the source of intense frictions and conflict and the rich genetic potential from which a new paradigm can emerge. A new paradigm requires a deeper understanding of the cultural underpinnings of democracy, a rational examination of the sacred cow of national sovereignty, and explicit recognition of the social responsibility of science for the consequences of scientific discovery and technological innovation. Leadership will play a crucial role in determining the outcome – intellectual leadership at the level of ideas, scientific leadership that exhibits consciousness responsibility, transformational leadership at the level of international institutions and nation-states.

To our normal perception, the future is like a one-way mirror. Looking forward from the present, it is impenetrable and blocks our vision of what is coming. Like a rear-view mirror, it presents a reflection of where we have come from through the lens of our prevailing ideas, beliefs and past experience. Looking backward from the future, we perceive the unfolding sequence of events as a logical consequence of causal determinates emerging out of the past that appears natural and almost inevitable. We are all blind in prospect and visionary seers in retrospect. In March 2015 WAAS and the World University Consortium conducted a brainstorming workshop at Dubrovnik to frame the outlines for a trans-disciplinary course on transformational leadership. In April 2015 the World Academy co-organized important conferences in Kiev and Baku – the fourteenth and fifteenth in the last three years – exploring

prospects for transition to a new paradigm.* These events sought to break some of the perceptual barriers posed by one-way mirror vision and to peer into the future through the cracks in its surface.

“The critical task before us today is to transform the ominous challenges confronting humanity into positive catalytic forces for rapid evolution to a new paradigm.”

1. Challenges are Opportunities

Today humanity confronts multidimensional challenges of unparalleled magnitude, complexity and consequences for current and future generations. The intensity and urgency of these challenges are magnified by rapid globalization, the accelerating pace of social change, exponential rates of technological innovation, and the increasingly extensive and intricate web of inter-linkages and interdependencies between people, institutions and aspects of life everywhere.

This is also a period of unprecedented opportunities for humanity. The momentous potential of these opportunities has been multiplied and magnified by the global spread of democracy and human rights, rising levels of education, increasing interconnectivity, soaring aspirations and other catalytic deep drivers. The consequences of these challenges and opportunities will depend entirely on the way we respond to them.

Looking backward, we sometimes observe dire challenges morphing into unanticipated opportunities. The US Civil War was ostensibly fought over the issue of whether slavery should be prohibited or permitted in new states being formed out of the westward expansion across the North American continent. But the deeper issue at stake was whether the young American union would remain a weak confederation of states or splinter into two or more independent nations. For several years permanent secession by the Southern states appeared the most likely outcome. Either way, slavery would have eventually been abolished, as it was elsewhere around the world. But had the early Confederate victories garnered the full support of European buyers eager for Southern cotton, the USA today might more closely resemble the semi-independent states of Europe that are now struggling to overcome their differences to build a strong federal European Union. Eventually the tide of military and economic might turned in favor of the North, national unity was preserved, slavery was abolished and a strong federal system replaced the weaker association of states that preceded the war. By the end of the 19th century, America had become the largest and most prosperous economy in the world. Following the two world wars, it became the most powerful nation militarily and politically

* The international conference on “The State of the World, Need for the New World Paradigm and Role of Ukraine in it,” organized by the World Academy of Art and Science, Bohdan Hawrylyshyn Charitable Foundation and World University Consortium, was held in Kiev, Ukraine, on April 25, 2015. The other conference held on April 29-30, 2015 in Baku, Azerbaijan, titled “Framework for a New Paradigm of Human Development” was organized by the World Academy of Art and Science and the Nizami Ganjavi International Center.

as well. A challenge to its very survival was converted into an opportunity for America to emerge as world leader.

In modern times the devastation of two world wars was converted into the foundations for two of the most important events in human history. First was the founding of the UN in 1945 to transform a world governed by a precarious balance of power and military might among a few imperial European empires into a world governed by a global organization of sovereign nations, rule of law and universal human rights. While it has failed to live up to its highest aspirations and proclaimed ideals, the establishment of the UN has successfully avoided onset of a third world war, created a global network of international institutions and forged a global community of nations based on shared values and goals.

The second remarkable event was the founding of the European Community and the European Union, which have successfully forged nations which had fought with one another incessantly for centuries into an entirely new type of transnational organization dedicated to promoting peace, harmony and prosperity for their culturally diverse populations. The critical task before us today is to transform the ominous challenges confronting humanity into positive catalytic forces for rapid evolution to a new paradigm.

Problems can be converted into opportunities. It is equally true that opportunities missed can become problems. The world missed an unprecedented opportunity at the end of the Cold War. It missed the opportunity to develop an inclusive, global economic system that promotes the security, welfare and well-being of all human beings. It missed the opportunity to completely abolish nuclear weapons that still pose an existential threat to humanity. It missed the opportunity to transform a competitive security paradigm consisting of exclusive and competitive military alliances into an inclusive, global cooperative security system ensuring peace and security for all nations. It missed the opportunity to fully extend the principles of rule of law and democracy to the institutions of global governance. It also missed the opportunity to convert the impending environmental challenge into a bonding agent to unite humanity against a common enemy that can only be defeated by global cooperation on an unprecedented scale.

Instead, 25 years later we find a global economy that is much larger but more unstable and uncertain in which poverty persists for billions of people, unemployment is rising to near record levels and economic inequality everywhere is returning to heights not reached since the 1920s. The number of nuclear weapons states has proliferated and the role of nuclear weapons in military doctrine is on the rise. The euphoria that followed the end of the Cold War is morphing into what has been aptly termed as “Cold Peace” in which the USA and its European allies are once again in confrontation with Russia, while the Middle East and North Africa are shaken by increasing levels of instability, and the growing assertiveness of China is raising notes of alarm in the Far East. Cultural and religious tensions and open conflict are on the rise even in the heartland of liberal Western society. Lip service is given to ecological concerns while water resources dwindle, temperatures warm and urban pollution endangers huge populations.

Why did we fail to seize the opportunity? Why couldn't we make it happen? Many explanations can be given. The persistence of old rivalries, prejudices and suspicions vitiated the expansive atmosphere following the fall of the Berlin Wall. Forgetting that the end of the Cold War was largely prompted by voluntary internal changes behind the Iron Curtain, some Western intellectuals prematurely proclaimed the final victory for capitalism and democracy and the end of history itself. The fall of the first twin tower was interpreted as ultimate triumph of the tower that remained standing but soon began to totter as it leaned toward neoliberal extremism that dismantled the regulatory environment which had stabilized and democratized capitalism during the 20th century. Political theorists mistaking the mechanical apparatus of free elections for the liberal democratic culture which constitutes its heart and soul pressed to impose that mechanism on societies that were politically, administratively, socially and culturally unprepared and ill-equipped for sudden transition. Former communist oligarchs presided over the largest theft of public property in history. Following a radical 33% fall in global defense spending after the Fall of the Berlin Wall, reactionary politicians wedded to a Cold War mentality and vested interests in the military industrial complex found ways to hike up defense spending to record levels. In spite of the movement toward unification in Europe, national governments clung to outdated concepts of sovereignty that predated the Enlightenment and the democratic revolutions of the past two centuries. Financial institutions and speculators plunged head first into the vacuum created by the new Wild West of unregulated global financial markets causing a rampage of instability that undermined economies and destroyed millions of jobs around the globe. A plutocracy of money power progressively replaced the dogma of political ideology in both East and West. The five permanent members of the UN Security Council clung possessively to the special privileges they had accorded to themselves as the victors in WWII.

“Limitation in our thinking manifests as problems in our living.”

For the past quarter century the increasingly globalized human community has drifted in a rudderless boat without compass or captain, giving literal meaning to the idea of a world in which nobody is in charge. Everywhere people sought for visionary leaders with the capacity to transform challenges into opportunities and potentialities into reality. With few exceptions they have been sorely disappointed. Politicians have found no difficulty in pointing fingers at domestic opponents or foreign conspirators. Multicultural liberal societies have descended back toward the intolerance of bygone eras. Yet these outcomes were neither necessary nor inevitable.

Many agree with the assessment of former Slovenian President Danilo Türk that international institutions have become victims of a powerful conservative tendency to maintain stability rather than evolve to keep pace with the needs of our times. That is why social evolution commonly occurs at the periphery where society is less organized and rigidly fixed in its ways. The emergence of the World Wide Web represented a momentous advance, sprouting up out of nowhere and rapidly developing into the first truly global social organization without any apparent plan or purpose. The development of new global business models, the proliferation of international civil society organizations and the very recent expansion

of on-line educational institutions are other examples of this principle. The world is more organized today than ever before, yet the central institutions that humanity looks to for global governance and rule of law appear increasingly incompetent and impotent.

2. The Intellectual Foundations of a New Paradigm

All these factors have contributed to the gross failures and missed opportunities of the post-Cold War period. But none in itself or in combination with others is sufficient to expose the root cause of these failures. For that we need to look beyond specific events, policies, institutions, vested interests and competitive nationalism to the underlying set of ruling ideas on which the current paradigm in human affairs is founded. The world we live in is an expression of the ideas we believe in. The limitation in our thinking manifests as problems in our living. The failures of our policies and institutions are founded on failures of thought and conception. As Einstein said, "We cannot solve our problems with the same thinking we used when we created them." Ideas have the Power to change the world, as Jean Monnet's dream became the living seed for the united Europe that acquired concrete reality after his death.

A new paradigm must be based on a new set of concepts and values attuned to the future we seek to uncork. It requires not only different ideas but also a new type of thinking that differs in essential ways from that which now prevails. First, the new thinking must be human-centered. That means all its premises and conclusions must be judged from the perspective of how far they serve human needs and how far they develop and unleash human potential. A blind faith in the magic of the marketplace, technology for the sake of technology, growth for growth's sake, the sanctity of national sovereignty and expediency of balance of power on which the present paradigm is founded are instances of mechanistic Newtonian thinking based on the supposed action of universal laws of social nature similar to the natural laws which have long been the pursuit of the physical sciences. But the principles governing human society are not creations of Nature or bound by immutable laws. They are creations of human beings which can be altered by conscious choice and made to function differently and better. Our task is not to discover immutable laws of social nature and adapt to them, but to formulate social principles that maximize the welfare and well-being of human beings. If faith is to play a role in the new paradigm, then it must be faith in the unlimited potential of human beings for innovation, creativity, development and evolution.

When Franklin D. Roosevelt assumed office as US President in 1933, he inherited America's worst-ever banking crisis, which had already resulted in the failure of more than 6000 banks. Millions of Americans had to line up at the banks to withdraw their hard earned savings, plunging even sound financial institutions toward bankruptcy. Conventional Economics offered no good solution to a financial panic of this intensity. FDR rejected as useless the economic theory he had learned at Harvard. Instead he went on nationwide radio and appealed directly to the American people. He understood it was the people who had created the panic by their loss of confidence in the system and it was only the people who could reverse it. He reminded Americans of the rich productive potentials of their country, the courage of their immigrant forefathers who risked all to come to the New World, and the can-do spirit of self-confidence that had made America rich. He correctly diagnosed

the real problem. “We have nothing to fear but fear itself.” And then he asked Americans to return to the banks and redeposit their savings. A change in perspective halted the panic. It was stopped by a man who understood that economics is a human science. It is this type of thinking that prompted US President John F. Kennedy to assert three decades later, “Our problems are man-made, therefore they may be solved by man. And man can be as big as he wants. No problem of human destiny is beyond human beings.”

“The new paradigm needs to conceive of an economic system that reconciles the creative energies unleashed by individual freedom provided by markets with the regulatory framework needed to provide security for all citizens, preserve social harmony and equitably distribute the collective fruits of modern society to all members.”

Second, the new thinking must be overtly and explicitly value-based. For long the social sciences have sought to mimic the code of value-neutrality and detachment achieved by the natural sciences in their observation of physical phenomenon in quest for objective knowledge for the material universe. The natural scientist is not expected to judge nature, but only to observe and understand it as it is. Karl Popper warns us against applying a similar approach to the social sciences, terming it ‘misguided naturalism’. The primary aim of the social sciences is and must not be truth *per se* but knowledge that promotes the welfare and well-being of human beings. The objective is not value neutrality that judges all phenomena as equally acceptable, but knowledge that strives to advance realization of values universally affirmed by world civilization and culture – freedom, peace, harmony, tolerance, justice, equality, integrity and truthfulness. In fact, social science has always been and must necessarily be value-based, but very often those values have been cloaked as universal laws to give them the guise of respectability of scientific truth. Democracy is not merely an amoral, mechanistic system of governance that can be installed by technical experts and function like a computer straight out of the box. True democracy is founded on a human social culture based on liberal values of freedom, tolerance and harmony that evolved in the West centuries before the right to vote and social equality became prevalent. Contemporary Economics is founded on a narrowly defined concept of efficiency that ignores the devastating costs to society of rising levels of unemployment and inequality and the ravaging environmental destruction resulting from pollution, resource depletion and climate change. Human labor is considered a dispensable, disposable resource. Rising levels of crime, drug use, social alienation and violence are dismissed as externalities. Education is accounted for as a cost rather than an investment in development of human capital. An economic system that deprives people of freedom of choice, security, opportunities for gainful employment and self-respect is unacceptable, even if it were to achieve remarkable heights of economic efficiency. As former Greek Prime Minister George Papandreou expressed at the Baku conference, “We

need to humanize global capitalism. We need to humanize our technologies to make sure they are used, not abused.” And to humanize the economic system in practice we must first humanize the values which it seeks to realize.

Third, the new thinking must be inclusive, holistic and ecological. Our problems are too complex and deeply rooted in history to be resolved by any such simplistic, reductionistic analysis. The new thinking must dispense with the expediency of dividing reality into tiny fragments and contrary viewpoints. It must be capable of embracing a more complex, sophisticated view of reality that can discover the truth and reconcile the differences between myriad points of view. The conflicts between neoliberalism and neo-Keynesianism, Russia and the West, Islam and the West, readily lend themselves to diametrically opposite worldviews, each denying validity, relevance and even a fair listening to one another. The Russian annexation of Ukraine is not justified by also conceding the folly of Ukrainian nationalists who sought to diminish the cultural rights of its huge Russian speaking minority. The failure of world powers to respect the security guarantees given to Ukraine when it agreed to abandon its arsenal of nuclear weapons does not legitimize the fact that for two decades after independence corrupt Ukrainian oligarchs enriched themselves while refusing to institute the essential reforms needed to democratize and modernize their young nation. As former Polish President Aleksander Kwasniewski reminded three former Ukrainian presidents in Baku, “Ukrainian reforms are essential for national cohesion, peace and security.” It was heartening and exhilarating to hear leading businessmen, public figures and educated youth at the Kiev conference acknowledging their nation’s errors and omissions and willing to accept their responsibility for building a transparent, multicultural, democratic society. Initiatives such as that of the Bohdan Hawrylyshyn Charitable Foundation are in the process of equipping a new generation of leaders with the intellectual capacity, values and determination to transform the nascent nation into a model for others to follow.

Fourth, the new thinking needed must be synthetic. As Roberto Poli pointed out, we seem to have lost the capacity to educate generalists capable of dealing with the complex problems confronting humanity today. We have to nurture the mental capacity to see beyond the dualities and reconcile apparent contradictions as complementarities at a higher level. Great discoveries in the natural sciences have been the result of insights that unified phenomena that had previously appeared unconnected or opposite in character. Thus, James Maxwell discovered that electricity and magnetism were two expressions of the electromagnetic force. Einstein’s equivalence principle unified acceleration and gravity. The new paradigm needs to conceive of an economic system that reconciles the creative energies unleashed by individual freedom provided by markets with the regulatory framework needed to provide security for all citizens, preserve social harmony and equitably distribute the collective fruits of modern society to all members. Similarly, the notion of national sovereignty must be reconciled with the equally legitimate claims of citizens for democratic rights, of minorities within states to preserve their distinct cultures and of humanity as a whole for an equitable sharing of the global commons. The new thinking must not merely recognize the legitimacy in opposing points of view. It must rise above the divisive perspective of competitive, nationalistic consciousness to acquire a global perspective and vision of emerging global opportunities.

3. Clash of Civilizations or Cultural Diversity

The discussion in Kiev and Baku highlighted both the immense challenges and momentous opportunities resulting from cultural diversity. Contact and conflict between diverse cultures are as old as human history itself. In retrospect we might characterize the entire process of human social evolution as a movement of innumerable isolated, distinct cultural groupings coming into contact and conflict with one another, defining themselves by their differences, expanding and transforming themselves to incorporate new ideas and values, simultaneously attracted, educated, threatened and enraged by their contrasts – a process that culturally enriched both conquerors and the conquered, those self-proclaimed as more advanced and those deemed only as passive beneficiaries.

It is virtually impossible to formulate a thought or perform a simple act without drawing on the rich cultural inheritance of ideas, words, concepts, objects, tools and technologies which constitute the collective dowry of our ancestors to all humanity. To write the answer to a simple financial problem, we utilize a system of numbers, the concept of zero and the decimal point fashioned in ancient India, the idea of money traced back to ancient Greece and the invention of paper in ancient China. Like the genetic diversity of living organisms, our rich cultural diversity is the source of unlimited creative potential. Until now we have harvested only an infinitesimal fraction of that potential.

Yet the rapid pace of globalization, massive movements of people and products, the lightning speed of human interactions have created what Alexander Likhotal aptly terms a tectonic ‘time-quake’ that threatens to divide families and communities from one another, tear nation-states apart at their seams, and convert whole regions into boiling pots of tension and violence.* In spite of our common collective inheritance, in times of trouble the first response of human beings is to shrink back into shells of isolation, to withdraw sympathies from those who are different, to find scapegoats that exonerate us from blame. Fascism has only exploited a universal human characteristic that is straining the bonds of cooperation that internally and externally unify the mature nation-states of liberal Europe today. Similarly, in times of untold opportunity our first instinct is usually to seek for our own reward and compete with one another for the fruits, even when there is more than enough to benefit all, even when we can all benefit most by cooperative effort. Human relationship and cooperation are the fundamental basis, building blocks and cement for all lasting human achievements. Yet the narrow, egoistic, selfish impulse is always ready to rear its head, claim credit and just desert for a larger share of power, wealth, resources, culture, virtue, spirituality and every other thing of value.

Nature seems to be engaged in a vast experiment of global dimensions to study the creative potential and reactive consequences of contacts between diverse cultural elements. America is its experimental melting pot, where countless generations of people from the world over have poured their different ideas, aspirations and resourcefulness into a common pool. India is another great experiment in linguistic, religious, ethnic and cultural diversity,

* Alexander Likhotal, in his oral commentary on the Future of Russia-West Relations at the Third Global Baku Forum on “Building Trust in the Emerging World-Order”, organized by the Nizami Ganjavi International Center, Baku, April 28, 2015.

which existed for millennia as a myriad assortment of politically independent princely states partially and occasionally united into empires, but united only by a common culture founded on tolerance and patience. In between these extremes of diversity we can find innumerable variations on a common theme. Looking backward we can only marvel at how much humanity has garnered from this rich diversity, which has at once been the source of the major conflicts between people, nations and civilizations in the past.

Living in a multicultural world is at once humanity's greatest challenge and its greatest opportunity. It is impossible to live without it. Were it possible for us to return all that we have borrowed from others, the wealthiest of nations would be reduced to poverty and the most enlightened to utter ignorance. We cannot seem to live harmoniously together yet it is impossible to live either physically or culturally apart.

More fundamental than the political and economic systems which it may embrace, the new paradigm must above all evolve a reconciling, synthetic formula for co-operative and mutually beneficial co-existence in an increasingly integrated, culturally diverse world. The prevailing ways of thinking only magnify and multiply the problems. We need a new way of thinking to forge a new paradigm for a multi-cultural world. Human-centered thinking can remind us that it is not our differences but our common humanity that is of central importance. Value-based thinking can reveal to us the precious cultural reservoir possessed by diverse cultures. Inclusive thinking can enable us to perceive the valid truth in viewpoints diametrically opposite to our own. Synthetic thinking can show us ways to reconcile the apparent contradictions of freedom and authority, rights and responsibilities, rationality and emotions, individualism and social unity.

4. Consciousness Responsibility of Science

At their core, paradigms are constructed from a subtle, intangible fabric of ideas, beliefs, values and perceptions that acquire perceptible shape and increasingly solid form as they are translated into institutions, policies, activities and ways of life. The 70,000 nuclear weapons armed and ready for launch during the Cold War were a tangible, concrete expression of a set of ideas and perceptions founded on an internally consistent set of arguments that now appear as utter madness and folly from the perspective of the present day. Yet a quarter century after their *raison d'être* has vanished, 10,000 nuclear warheads remain and 4000 are on active alert. Ideas have power.

One of the powerful prevailing ideas governing the current paradigm concerns the social responsibility of science. The World Academy was founded 55 years ago by eminent intellectuals deeply concerned about the threats posed by the rapid development of science and technology. Among them were individuals such as Einstein, Robert Oppenheimer, Joseph Rotblat and Bertrand Russell, who played a direct role in the creation of nuclear weapons or in the early debate regarding the morality of their use.

Modern science inherited from its predecessors the Cartesian notion of the scientist as impartial, passive, detached observer of phenomena, rather than as an active agent in the workings of Nature. Quantum theory laid to rest the scientific illusion of separation between

human beings and the world around them. Indeed the world we live in today is so directly and powerfully the product of scientific and technological development that any claim to the contrary appears otiose. Yet, the myth of scientific detachment persists. The development of birth control technologies and genetic engineering of plants and animals has fueled intense debate in recent decades.

The pace of scientific and technological advances has now become so rapid, that it is far outpacing the capacity of human civilization and culture to control its applications, anticipate its consequences or govern its processes. The Baku conference posed salient questions: What should be the responsibility of science and government for ensuring that science and technology are applied in a manner that promotes human security, welfare and well-being? Keeping in mind both the positive and negative aspects of science and technology in society, how, and by which means, do you foster the positive contributions and deter the negative ones? What role, if any, should government play?

Roberto Peccei emphasized the dual characteristics of S&T that make it so difficult to arrive at appropriate answers to these questions. S&T has been instrumental in bringing about enormous improvements in quality of life over the last two centuries. At the same time it has resulted in serious problematic developments, such as the creation of nuclear and chemical weapons. Scientific findings such as genetic engineering and human cloning raise significant ethical questions for society. Continued investment in S&T is required to address serious problems such as Ebola and climate change. At the same time unregulated development and application pose real and present dangers that tangibly impact on the lives of millions of people. Recall that in recent decades two Nobel Prizes were awarded for the development of computer algorithms that have destabilized global financial markets and destroyed untold wealth. When reflecting on the role of science and technology in our world, it is important to be aware that they have these dual characteristics.

The issue is further complicated by the fact that the ultimate outcome of scientific research is often unpredictable. The Internet eventually arose from a US defense research program funded by the US Government and the World Wide Web was invented by an engineer at CERN, whose idea of a more effective communication system consisting of a network of interactive computers using hypertext was initially rejected by his supervisors as without significant value.

Governance of the potentially disruptive impacts of science and technology on civilization and culture has become urgent and acrimonious, but has so far defied simplistic solutions. Scientists affirm that importance of freedom in their quest for knowledge of the universe, while often dissociating themselves from the worst abuses of scientific knowledge by governments, corporations or terrorist groups. The pros and cons are easy to identify. An appropriate synthesis has yet to emerge. Like economy, science is only a part of society and needs to be viewed within the wider context of its overall impact on human beings, rather than as an independent compartmentalized activity. Momir Djurovic proposed that the social sciences could play an important role as a filter influencing how the natural sciences are applied.

One essential element in a final reconciling solution must be recognition by scientists of their social responsibility for the consequences of the discoveries and inventions they generate. That responsibility does not stop with the publication of their findings. It must, as it did for the founders of WAAS, extend beyond their immediate personal activities to the wider consequences issuing from their actions. It must be a responsibility that applies not only to the actions of scientists but also a responsibility in consciousness that makes them active agents committed to ensuring the right use of the knowledge they generate.

5. Nurturing Transformational Leaders

The world needs leadership in thought to shape the contours and identify important components of the new paradigm. But conception is only the first step in the process of creation. That conception needs to be energized by the aspiration, charged by will and enlivened by emotion until it acquires a self-organizing power for self-realization. Leadership is needed at this stage to awaken hope, inspire confidence, and generate the kind of determination young Ukraine is now striving to acquire. Ultimately, the quest for a new paradigm must be a transition from thought to action. So we also need leaders with courage, capacity and experience for bold, dynamic skilled action.

Thus, we are inevitably led to ask, “Where are the dynamic, visionary, transformational leaders needed to lead the transition to a new paradigm?” The role and process of leadership were explored in a four day WAAS-WUC workshop at Dubrovnik during March 2015 discussed in the article by Janani Harish entitled “Leadership for a New Paradigm in Human Development” published in this issue of *Cadmus*.¹ The workshop was intended to serve as the foundation for development of a trans-disciplinary course on transformational leadership.

Are great leaders born or made? This is another form of the old debate about Nature and Nurture which has long been applied to entrepreneurs, artists and intellectual geniuses. In recent decades genetics and biochemistry have been used to bolster the claim of Nature. If leaders are born not made, how can we explain the fact that great leaders only seem to appear at critical moments in history? At the birth of the USA, America was blessed with a remarkable array of talent – Washington, Franklin, Hamilton, Adams, Jefferson, Madison and Monroe. Over the following two centuries, why is it that even a single American leader of comparable stature has only rarely emerged? The birth of Indian Independence was achieved by a comparable galaxy of greatness – Sri Aurobindo, Gandhi, Nehru, Patel, Rajagopalachari, Tilak, Bose and others. Churchill was a leading public figure for decades, but he rose to the status of a great leader only after leading the Allies to victory in WWII. As in most cases, the truth is both simpler and more complex. Nature generates capacity in potential. Environmental circumstances create the challenges and opportunities that stimulate the activation and emergence of potentialities dormant beneath the surface. And what is true of political leaders, entrepreneurs and geniuses is true of human beings in general. Humanity may never produce greater minds than Socrates, Leonardo and Newton, but it can certainly become much more successful in nurturing full development of the human potential in every citizen and fostering its expression. Whatever their failings, modern democracy, human rights and education have proven to be more effective instruments for activating and developing human potential.

Leaders are neither entirely made in a crucible nor sired by a quantum vacuum. A great leader is at once a child of the times and a wet nurse of the future. In 1987 someone asked Soviet President Gorbachev what was the difference between his program of Glasnost and Perestroika and the Prague Spring of 1968 initiated by the reform-minded Czech leader Alexander Dubček. Gorbachev responded, “Nineteen years!” Gorbachev was among the young Soviet leaders inspired by the six month period of peaceful liberalization in Czechoslovakia, until it was so suddenly and violently suppressed by half a million Soviet and allied troops. That movement re-emerged in 1989 as the Velvet Revolution that ended Soviet rule. Even earlier as an idealistic communist youth leader, Gorbachev had witnessed the Hungarian Uprising of 1956 and its brutal suppression. Three years before that, Soviet Premier Khrushchev shocked the USSR with his public denunciation of the atrocities committed by Stalin. As an individual, Gorbachev was a bold idealist, but his ideas and actions were molded by the aspirations of his countrymen long suppressed by Soviet terror and by his identification with the deeper aspirations of humanity-at-large to end the madness of the Cold War. In the words of his former aid Alexander Likhotal, Gorbachev helped to uncork the future rather than to invent and construct it.*

Just two days before the fall of the Berlin Wall, Gorbachev, German Chancellor Kohl and US President Bush conferred and speculated that it might be a generation or more before German unification would be possible. It became a reality less than one year later. Their intimate knowledge of circumstances and events did not enable them to pierce the thin veil that concealed the remarkable events that unfolded.

The sudden onset of radical transformations such as the end of the Cold War, reunification of Germany and the explosive growth of the World Wide Web are instances of what Nassim Nicholas Taleb refers to as black swans – very rare events with huge impact that appear highly improbable until after they occur. Such phenomena are presented as evidence that the world has become increasingly uncertain and unpredictable, like the behavior of subatomic particles according to Quantum theory. The analogy has some validity. For although the individual behavior of particles is highly unpredictable, their collective behavior conforms with remarkable precision to the laws and formulas of Quantum Mechanics. The precise place, time and sequence governing human social evolution may appear equally difficult to predict, but the direction and long term trends follow the curve of emerging human aspirations and awakening human consciousness. Uncertainty is the flip side of infinite possibility. Rather it is the appearance that possibility takes until it reveals its potential. One way mental mirrors blind us to the opportunities and fill us with dread of our own reflection.

6. The Shape of Things to Come

The world we live in today is a multidimensional paradigm built upon successive layers of political, economic, social and cultural evolution extending back into the distant past and consisting of myriad overlapping waves of development interacting, conflicting and clashing with one another in a ‘time-quake’ of civilizational tectonic plates. It is difficult enough to

* Alexander Likhotal on Mikhail Gorbachev during his lecture at the Post-Graduate Certificate Course on Effective Leadership at the Inter-University Center, Dubrovnik, Croatia held from March 31-April 3, 2015 <https://www.youtube.com/watch?v=MpljYcinTt0>

objectively reflect on the complex paradigm in which we are now so deeply and subjectively submersed that we cannot even see its boundaries and constructs. How much more difficult is it to envision the shape of reality on the other side of the one-way mirror of the future!

Whatever shape a paradigm may assume, it has little resemblance to a linear, two dimensional map or matrix diagram. Nor does the process of its unfolding or uncorking represent a unidimensional movement along a single time axis. Movement to a new paradigm may be better conceived as the multi-dimensional development of a sphere that expands on the surface, grows outward from a common center along millions of rays, adds multiple layers of depth as it expands like the geological layers created during the evolution of Earth, and integrates laterally to interlink and bond the rays into a richly woven multilayered fabric of connections and relationships. The center of the sphere consists of the deepest aspirations of humanity. The rays trace the gradual emergence to the surface of physical, social, psychological and spiritual values which represent the quintessence of wisdom regarding survival, accomplishment, growth, development and evolution. The geological layers of the sphere, like those of earth, reveal the successive stages in the historical progression of civilization from pastoral and agrarian to urban, industrial and post-industrial societies. The surface of the sphere is populated by the external mechanisms of civilization characteristic of the age in which we live and often mistaken for the real drivers when in reality they are artifacts and consequences of deeper values and forces moving beneath the surface. The entire sphere is a single, living, self-organizing, social organism throbbing with life, growing, mutating and transforming itself more and more rapidly in time.

Such a conception may capture the complexity of a paradigm, but hardly generates the kind of clarity needed for us to consciously act as catalysts for its evolution. To do that we need at least to identify some prominent markers that characterize the emerging paradigm and distinguish it from the one in which we presently live. Many of those prominent markers have become evident during the course of the fifteen WAAS conferences. Others are yet to be identified.

7. Who is in Control of our Evolution?

The Nature vs. Nurture debate acquired a new dimension at the Baku Conference when it was applied to the question of paradigm change itself. Do human beings change paradigms or do paradigms change by themselves as a result of forces and processes beyond the control of human beings to direct or control? Is it simply hubris for human beings to attempt to create a better future? Do we have the knowledge, wisdom and capacity to consciously evolve as a species? Or must we rely on a mysterious mix of Chance and Necessity to bring about a future we can neither envision nor realize by our own power? Are paradigms created or do they simply emerge? If we conclude that they are formed by a process of emergence, what have we really explained other than to apply a descriptive label to a mystery without saying anything about the process or our role in it?

Humility demands that we be fully cognizant of our ignorance and extremely modest with respect to our collective wisdom to chart a new course. Yet great leaders have always asser-

ted that the human will, not merely the laws of nature or divine providence, governs human affairs. Confronted by the overwhelming onslaught of the Nazi air raids during the Battle of Britain, Churchill did not stop to calculate the odds for and against his country. Instead he emphatically proclaimed on behalf of his nation and free people everywhere: "We shall never surrender". Instead of the much anticipated collapse of British resistance within three months, Germany was forced to retreat from the first major failure of its war plan and the momentum began to shift from Axis to Allied powers.

The historical record clearly confirms the centrality of human consciousness in determining the direction of social evolution, if not always the timing, sequence and methods by which it is realized. The abolition of slavery by Lincoln in 1865 was the bold and brilliant action of a remarkable leader. But it was also the inevitable consequence and expression of a movement of social forces that can be traced through hundreds of incremental steps from a decision of the Lord Chief Justice emancipating slaves reaching the shores of England in 1701, the abolition of slavery in Russia and China in the 1720s, in Portugal in 1761, in Pennsylvania, Vermont and other American colonies from 1775, followed by the gradual abolition of the slave trade and colonial slavery by European powers early in the 19th century. Looking backward, we see that the idealistic proclamations of early abolitionists such as William Wilburforce carried a compelling force for realization. Looking forward to the Indian Independence Movement, the American Civil Rights Movement and the end of Apartheid in South Africa, we see the once utopian ideals gradually acquiring the irresistible force of social determination. The paradigm change from slavery did not just happen by itself. It was born in the minds of visionary leaders, ignited by a fire of aspiration in the hearts of countless adherents and through many fits and starts, gradually coalesced into power to brush aside apparently immovable barriers to social progress, as it did violently in the case of the French and Russian Revolutions and peacefully in the case of Indian Independence and the collapse of European colonialism from 1947, the fall of the Berlin Wall and end of the Cold War after 1989. As Ashok Natarajan argues in "Is the World Floundering or Has She a Vision?" in this issue, human aspirations are an invisible but irresistible force for social evolution – one might even say, a force of Nature.² This perception is behind the emphatic assertion by US President Kennedy that "No problem of human destiny is beyond human beings."^{*}

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Notes

1. Janani Harish, "Leadership for a New Paradigm in Human Development," *Cadmus* 2, no.4 (2015): 88-104
2. Ashok Natarajan, "Is the World Floundering or Has She a Vision?," *Cadmus* 2, no.4 (2015): 48-56

^{*} A Strategy of Peace, was a commencement address delivered by President John F. Kennedy at the American University in Washington, D.C., on Monday, June 10, 1963.

From Reset to Reboot?

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Abstract

The Ukrainian crisis provoked a serious and dangerous deterioration of relations between Russia and the West. However the relations between Russia and the West should not be reduced to the current Ukrainian crisis. The rational interpretation requires getting rid of Cold war prejudices and facing the systemic dysfunctionality of the current international system routed in the failure to adjust it to post Cold war realities.

To “reboot” this dangerous system “freeze” it’s important to reformulate the international agenda and political frameworks to encourage transformative leadership. The new architecture should provide an integrated agenda for progress on security, energy, and economic cooperation as well as coordinated efforts to address frozen conflicts. And most urgently, joint and concerted efforts are needed to take Ukraine out of a condition of social and state breakdown, and turn it into a hub of cooperation rather than a prize drawn from East-West competition.

The Ukrainian crisis provoked a serious and dangerous deterioration of relations between Russia and the West. And a new “reset” will not help any more to improve the situation; we need a full system reboot to avert the revival of Cold War, arms race and other threats that are looming large, especially climate change, the growing shortage of fresh water, food shortages, international terrorism, cyber security, pandemics and so on.

Since there are many factors at play, it is very important now to take a sober and balanced look at the situation, to be conscious of the existence of both external and internal core reasons of the crisis.

At the global level, it is a symptom of the growing dysfunctionality of existing world order. This was triggered by a failure to adjust it to new realities after the end of the Cold War. The world has been pregnant with the new order (both leaders Bush and Gorbachev paid a lot of attention to this issue). However, these plans have been archived by the West which was carried away by the “victory euphoria” after the end of the Cold War. Pope John Paul II warned in 1992 that “the Western countries run the risk of seeing this collapse of Communism as a one-sided victory of their own economic system, and thereby failing to make necessary corrections in that system.”

Unfortunately, after 25 wasted years, his prediction did come true as the global crisis of 2008-2009 triggered the transition to a different historical period. In essence, it clearly

revealed that the world's development has reached a point where the degree of interdependence between nations is out-of-sync with the world's capacity for coordination.

This asymmetry has put in front of the world a choice between two ways of balance restoration.

The first option is to strengthen the interdependence. This was what the G20 proposed in 2009, but failed to implement.

The second option is to reduce interdependence – give way to “de-globalization”. The world's development has, unfortunately, been sliding towards the second scenario.

When peaceful change is not possible, violent transformation becomes inevitable. Russia routinely and arrogantly has started to exploit the vulnerabilities that have opened up the following mistakes and miscalculations by all sides over the past 20 years. China has done the same in its relations with Japan, as has Iran – on the nuclear issues, and the religious radicals all over the world.

And it is not surprising that at such times the “upper hand” would go not to those who play best by the rules, but to those who seize the right moment to reject the rules, impose new rules and, when needed, renounce those new rules as well.

Ukraine is clearly one of the victims of this process. Located on the border of two geopolitical entities, the country is being torn apart by “deglobalisation”. This is why there are no diplomatic “quid pro quo” solutions at hand now. All the goodwill in the world will not bring together two major geopolitical entities compelled to protect their interests in ways that must necessarily make the other feel threatened.

From the Russian perspective, NATO expansion has always been seen as treachery – a direct violation of both overt and covert agreements reached with the West at the end of the Cold War. Russia has already had to silently swallow two waves of NATO enlargement. But the possibility of NATO expansion to Ukraine – the soft underbelly of Russia's perceived security zone – especially after the 2008 NATO Bucharest Declaration practically extending invitation to Georgia and Ukraine to join the Alliance, was seen almost as a reason for a big war starting.

However, Putin is not just seeking Western concessions on Ukraine. Ukraine is, in fact, only a convenient space in which to apply a new “Russian world” strategy. Certainly, Russia has local tactical aims in Ukraine – relative autonomy for the Donetsk and Lugansk regions, reliable life support systems for Crimea and Transnistria, and a guarantee that Ukraine's political choices do not undermine Russia's security. But these are only bargaining chips in the pursuit of the real prize – recognition of Russia as the true and lawful successor to the USSR's superpower status. In Putin's eyes, only this will crown him appropriately – and extend his presidency beyond any electoral horizon.

Global forces are also clearly exacerbated by an inherent Ukrainian problem. Alexander Solzhenitsyn prophetically remarked in his memoirs, which he wrote in exile long before the

fall of the Soviet Union, that the “Ukrainian question is one of the most dangerous issues of our future... the minds on both sides are not well prepared for it.” He continued: “As it is useless to tell Ukrainians that we all descended, by birth and spiritually, from Kiev, and it is just as useless to expect Russians to recognize the fact that people beyond the Dnieper River are different. And it is the Bolsheviks who were responsible for many of the wounds and much of the discord.” The writer feared that it would be “too difficult to have a reasonable conversation.”

“Current governance and international institutions should be upgraded fast enough to harness and channel change, instead of being overwhelmed by it.”

Solzhenitsyn accurately pointed out the key problem: the conflict of identity that has been translated, after Ukraine’s independence, into two distinctly different development models – one westward looking and nationalistic-monocultural and the other eastward oriented and multicultural.

More than any other change of government in Kiev since 1991, the overthrow of Viktor Yanukovich last year brought the triumph of the nationalistic perspective, held most strongly in western Ukraine, whose leaders were determined this time to ensure the winner takes all, decoupling the country from its historic links with Russia.

Against this background, the West’s support of the Maidan, the overthrow of Yanukovich served as the trigger for Russian preemptive strike, designed from Russian perspective to prevent a much larger disaster.

The West might have even yielded on Ukrainian agenda, if Russia’s claims did not stretch beyond keeping Ukraine in its orbit. But the West understands that the surrender of Ukraine would mean a return to the post-war system that emerged in 1945 and was dismantled with the end of the Cold War and the fall of the Berlin Wall in 1989.

But we are not necessarily condemned to a new round of global confrontation. A number of things can and should be done to reverse the dangerous trends and prevent a new division of Europe and the world.

Globally the “rules of the game” must be changed to make escalation impossible. It’s important to reformulate the international agenda and political frameworks to encourage transformative leadership. The world must stop succumbing to “baby-sitter syndrome,” where the most attention always goes to wherever the most noise is coming from. Current governance and international institutions should be upgraded fast enough to harness and channel change, instead of being overwhelmed by it.

Within Europe, the crisis can be re-scaled by working out a common goal of long-term co-development. It must be acknowledged that Europe today is not the center of the world. Its problems are part of a complex global system, where all are affected by all. Perhaps, as once the United States and Canada were made part of the European process, it's time to think about turning the European process into a Eurasian one.

“Most urgently, joint and concerted efforts are needed to take Ukraine out of a condition of social and state breakdown, and turn it into a hub of cooperation rather than a prize drawn from East-West competition.”

It is time also to stop basing strategic thinking on Tom Clancy's novels. Peace is not a zero sum game. Security crisis is always rooted in perceptions and cannot be resolved by military means. War does not determine who is right – only who is left.

Put simply, setting up a public duel is a bad way to solve a crisis. The West's views of Russia today are outdated and need to be corrected. Such a correction will be nearly impossible, however, so long as Russia itself keeps believing its own propaganda and fails to define and articulate its long-term interests.

For its part, Ukraine should abandon delusions about its future. Ukraine won a historical chance of becoming a true European nation, but in order to accomplish it needs strong political will instead of populist decisions, commitment of the people and determination of political elites. Europe can be a babysitter but not a breast-feeding mother in this process.

Besides, Europe is not anxious at all to bring Ukraine into the EU at the time of mounting economic difficulties. Accepting Ukraine into NATO today would be a worst nightmare for the alliance. And no one is going to fight for Ukraine. History and geography bind it for better or worse to be a neighbor of Russia. This is not in fact limiting its political choices, but rather enhances them. As the Russian/Ukrainian saying goes, “a gentle calf sucks two cows”.

The smartest option for the country would be to focus on domestic transformation – economy, social sphere, politics and a new constitution. Donetsk and Lugansk, as well as Crimea, could be declared temporarily occupied Ukrainian territories, along with assurances that there are no plans to reclaim them by military force. A reliable defense of the new disengagement line should be organized, with international peacekeepers, to push responsibility for social and economic development where it now belongs: the separatists and the occupational forces. In parallel, cultural autonomy (language, schools, regional tax systems, etc.) should be provisioned for regions that will come back or be returned or reclaimed in the future.

But it is most important that the new architecture should provide an integrated agenda for progress on security, energy, and economic cooperation as well as coordinated efforts to address frozen conflicts. And most urgently, joint and concerted efforts are needed to take Ukraine out of a condition of social and state breakdown, and turn it into a hub of cooperation rather than a prize drawn from East-West competition.

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Leadership for a New Paradigm in Human Development

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Abstract

Everyone takes decisions and initiatives. Leaders take charge and initiate changes. Transformational leaders take responsibility for all and, guided by positive values, lead society into the future. These men and women of profound vision give expression to the subconscious aspirations of society that are striving to awaken, and act as a catalyst for their realization. Empathy, compassion, humility, emotional and social intelligence, and effective decision-making skills are characteristics of the transformational leader. Power, wealth and glory hold little value for them, they are above ego and have no thought of personal gain. They take consciousness responsibility for all, far greater than their authority warrants or requires. Espousing the collective cause, they forge ahead with great courage and conviction. Any setback or hurdle is faced with equanimity. Their original and creative thinking converts challenges into opportunities. They know that the unrealized is not unrealizable. They are able to inspire others to realize more of their potential, channelize the collective social energy and organize it into a power that accomplishes.

Transformational leadership defines accomplishment in the broadest sense. One country cannot prosper at the cost of the rest of the world, one group of people cannot be secure when there are others somewhere on the planet who are insecure. No problem is isolated from all else, and a comprehensive solution is possible only for those who have overcome dualistic thinking and can reconcile apparent opposites. Transformational leaders have such an integrated view of every issue and situation, and can usher in a new paradigm of human development that ensures peace, security and well-being for all. This article analyzes the various facets of transformational leadership.

1. The New Paradigm

Less than three hundred years ago, books were chained to the shelves in libraries because they were so precious, being few in number. There were some libraries where the readers were locked into cages themselves, to ensure that the valuable books remained safe! Learning was only for the privileged class. Today, books, readers and knowledge have been liberated in many ways. We have digitized content that can be replicated and distributed virtually, infinitely. In thirty years, we have moved from the terms Kilobyte and Megabyte, through Gigabyte and Terabyte, to newer terms whose magnitude is as difficult to appreciate as their necessity is, to visualize. This is just one of the hundreds of strands of human life that have undergone a transformation. Population has increased exponentially, globalization has

rewritten economies, environment has been overrun by humans, religion is getting mixed up with extreme fundamentalism, and technology is shrinking the globe on one hand while social and economic disparity is creating polarities. All of these various strands of human activity entangle and evolve into compound issues. In short, we live in a time of unparalleled complexity.

As the complexity intensifies at an accelerating pace, it gives rise to new and exciting opportunities. However, it also poses multidimensional challenges that necessitate a radical change of course for all. Existing ideas, policies, institutions and systems are inadequate to address the challenges. We need an effective way to deal with them, and to tap the enormous potential we already possess for promoting human security and welfare. A new paradigm in human development is needed.

The World Academy of Art and Science (WAAS) conceived of the idea of formulating a new paradigm to address critical issues facing humanity. The Academy initiated this project in 2012, by asking the question, “Is there any conceivable paradigm that can successfully address all the pressing challenges confronting humanity today in a manner that offers the prospect of achieving peace, security, welfare and well-being for all human beings everywhere?” It has identified several driving forces that have the potential to effect radical social transition of unparalleled magnitude and rapidity.

In order to manage these driving forces and radically transform the way the world is functioning, we require transformational leaders, leaders who can usher in a new paradigm. The challenges we face today are so great, the magnitude of the change needed so enormous that the status quo will not work. Old methods that worked in an earlier period may be ineffective, or worse, calamitous now. Instead of fixing the issue, they may simply cut off an odd head of the hydra. We require new ideas, new values, new systems, new organizations, and to head these organizations, transformational leadership.

Paradigm change is not a new idea. History has seen a great number of these. When the astronomer Nicolaus Copernicus said that the Sun is at the center of the solar system, and not earth as believed in the 15th century, it was a paradigm change in thought, science, and its relationship with the Church. The refusal of Rosa Parks, an African American lady, to give up her seat and move to the back of the bus in keeping with the laws of segregation in Alabama, USA, set off in motion the events that culminated in the Civil Rights movement in the country and a change in the status quo of all African Americans. Socio-political movements such as the Renaissance, Reformation and Enlightenment, the end of colonialism and the Cold War, even the personal computer and internet revolutions are paradigm changes. At each of these great junctures in the past, there has been a critical mass of leadership, to effect a radical change of course. These leaders were in tune with the aspirations of those around and equipped with the various skills required to spearhead a mass movement. New paradigms are brought in by nothing short of transformational leadership.

We most certainly need a paradigm change, at all levels – at the global level, and in every nation state, region, organization, group and individual. We need it in thought, values, education, environment, politics, economics, industry, technology, media – in all spheres of life. Before our many challenges grow out of control and overwhelm us all, we need to act.

Keeping this need in mind, the World Academy of Art and Science, along with the World University Consortium (WUC), The Mother's Service Society (India), Person-Centered Approach Institute (Italy), Dag Hammarskjöld University College of International Relations and Diplomacy (Croatia) and Inter-University Centre (Croatia), offered a post-graduate certificate course on Essence of Effective Leadership* in April 2015 at Inter-University Centre, Dubrovnik, Croatia. The course faculty consisted of WAAS Fellows, leaders in their own right, from a wide range of fields of expertise. Ivo Šlaus, Honorary President of WAAS and Director of WUC, gave the introductory lecture, noting that leadership is embedded in the motto of WAAS, "Leadership in thought that leads to action." The core ideas of the course were the need for transformational leadership and the characteristics of the leader. Transformational leadership is very necessary for the future of the world. People at all levels, in all fields of society, need to exhibit this capacity in order to contribute to the paradigm change.

"It was not the steam engine that powered locomotives, it was man's need to move out of his village or town, to newer places that was the source."

2. The Process of Accomplishment

In order to accomplish in future, a look back is essential. Human beings have always accomplished. We have accomplished at the level of survival ever since we appeared. By coming together in groups, foraging for food, sheltering from the elements and defending themselves from the wild, early humans did a remarkable job of surviving. As civilizations appeared, society evolved, creating and perfecting organizations for furthering human aspirations. Accomplishment moved from mere survival to growth and development. Trade, commerce, education, arts and science developed. Today we talk about accomplishment at the level of evolution. But regardless of the level, there is a process of social accomplishment that is common at all levels. In order to plan for the future, and prepare leadership that can bring it about, we need to fully understand this process.

The process of accomplishment is the conscious pursuit of objectives by human beings. Its seed is human aspiration. Any act is preceded by one or more persons wanting it. When early humans sought shelter and warmth, dwellings and clothes were fashioned. When they wanted to settle down instead of always moving in search of food, agriculture and animal rearing began. When needs rose in quantity and complexity, markets, trade and transportation developed. Human ingenuity kept pace with human needs. Intellectual, industrial, technological and social revolutions have all been brought about essentially by human aspiration.

Aspiration is the source of great energy. Human energy is the basis of all accomplishment. It was not the steam engine that powered locomotives, it was man's need to move out of his village or town, to newer places that was the source. As power and prestige moved away from owning land to being in trade and industry, the industrial revolution came about,

* See <http://www.worldacademy.org/courses/iuc-april-2015/effective-leadership>

the availability of coal, iron and steel was not the basis of the revolution. The shipping industry owed its development to man's ambition and quest for adventure. The advances we see in technology and communication are the result of our need for more efficiency, conveniences and entertainment.

“The well-developed individual thinks for himself, is not restricted by any of society's norms, and can envision a future that is different from and better than the present.”

Energy by itself does not accomplish. There is great energy in a raging river, but it is only when the water is dammed and channelled through sluice gates that it is turned into a force. Similarly, human aspiration releases energy, but this energy needs a right direction, to become a force. When the flowing water is passed through a turbine, it is converted into hydroelectric power. The force of human energy organized around an activity or pursuit is transformed into an effective power. This power, expressed through skills, results in action and accomplishment. Accomplishment at all levels, from the individual to the global, is defined by this process.

Leadership is a key element in this process, catalyzing and directing the accomplishment at every stage.

3. Role of the Leader in the Process

When Mahatma Gandhi landed in India after spending twenty one years in South Africa, he had a clear vision. He had already taken part in anti-apartheid protests in Africa, and effectively handled the might of the ruling class without violence. He was in tune with the subconscious aspiration of all Indians. He awoke in the collective consciousness of his people the faith that they could become free of their colonial ruler. He generated and released energy in himself and in others. He saw to it that this energy was not scattered for want of direction, or dissipated in violence. He led by example. He espoused simplicity, selflessly gave himself to the cause of the nation, and related to the masses to such an extent that tens of thousands of people left their jobs and comfortable homes to join him in the freedom struggle. India became free after over two hundred years of colonial rule, through a largely peaceful movement. This was brought about by the visionary leadership of Gandhi, and many others like him.

The transformational leader gives an impetus to the process of social accomplishment, at every stage. He awakens the aspiration in others, and generates the energy required to complete the task. Through his own vision, goals, plans and values, he gives the force a direction. He builds an organization, or uses an existing one, to channel the force, thereby transforming it into an effective power. He expresses the power effectively through skilled action. Great movements have vaporized because of the lack of strong, effective leadership. Conversely, near impossible acts have been carried out when one person or a team has shown the way.

Alexander Likhotal, President of Green Cross International and Director, WUC, underlined the importance of leadership when he quoted Napoleon's words, "An army of sheep, led by a lion, is better than an army of lions, led by a sheep." As Likhotal put it, the leader uncorks the future.

4. Leadership and Individuality

Individual Accomplishment, Growth and the Character of Life was the topic of an earlier WAAS and WUC course in August 2014. This course, now available online*, described individuality as the acme of human development. The well-developed individual thinks for himself, is not restricted by any of society's norms, and can envision a future that is different from and better than the present. For anyone to become a leader, he has to be a formed individual. One who follows the herd and dares not to question the status quo is not qualified to lead. Uncorking the future can only be done by someone not limited by the present, he has to think beyond what everyone else sees, believes and considers possible.

Had the leader of the Protestant Reformation Martin Luther gone about his work and life without questioning the prevailing thoughts, he would not have come up with even a single thesis. Had he been awed by the might of the Pope and the Catholic Church, he would have considered his 95 Theses pointless, and abandoned the idea before he reached the door of All Saints' Church in Wittenberg. Without calculating the odds against him, and with deep conviction in his ideas, Luther acted. He was strong, courageous, open minded, intelligent, responsible, farseeing, and creative – a formed individual. Leaders with well-developed individuality shape history and lead us into the future.

5. Leader as a Product of Social Forces

The leader is the mountain peak. His position rests on every rock and stone beneath, and is shaped by every current of wind and water that flows past. The social context determines the leader. Without taking away any of the talent and hard work of the tech entrepreneurs, it can be safely said that the incubatory atmosphere of Silicon Valley has played a key role in creating and nurturing many ventures. Steve Jobs, founder of Apple Inc., lived among engineers working in the integrated circuit chip and telecom industry, near Palo Alto Research Center, seeing start-ups taking off in garages nearby. He was a revolutionary product of the hippy generation sharing the prevailing aspiration to boldly change the world. The man who went on to become CEO of Apple Inc. manifested in his company and its products that creativity and originality that defined his own life, which in turn were a result of the place and period he grew up in. Social undercurrents of the times influence all people, leaders included.

Danke Gorbi, the Germans wrote on the Berlin Wall, thanking Mikhail Gorbachev on behalf of the whole world, for lifting the Iron Curtain, ending the Cold War, and defusing the nuclear warlike situation in 1989. The man who is hailed as the hero who liberated East Europe and brought world peace was, as a youth, an ardent admirer of Stalin. When Stalin was in power, he was worshipped by the masses. Gorbachev who was an idealistic youth, joined

* See <http://www.worldacademy.org/courses/course-1/individual-accomplishment-growth-and-character-life>

the Communist Party and shared the sentiment so prevalent at the time. After the death of Stalin in 1953, when Khrushchev came to power and denounced Stalin, it was a shock to all. The persecution and purges perpetuated by Stalin came to light. Following the disillusionment that resulted from that was the Hungarian Revolution in 1956. That, and the Prague Spring in 1968 headed by the Czech leader Alexander Dubček, brought to light the true state of affairs. People aspired for freedom, they wanted greater rights, to choose for themselves, to express themselves. But the Soviet tanks were sent to crush all expression of freedom, and communism in its current form appeared to Gorbachev in a new light. He had admired Dubček's reforms of liberalization in Czechoslovakia. These social and political changes that Gorbachev lived through explain the ideology and value system that he eventually adopted. When, as the President of the USSR, he initiated his policies of restructuring and openness, he was asked by a reporter what was the difference between the Prague Spring and his initiatives. Gorbachev replied, 19 years.

“One who finds exhilarating a situation that most others would find overwhelming is cut out to be a leader.”

Social movements create and shape the leader, and the leader then goes on to shape society and lead it into the future.

6. Converting Challenges into Opportunities

Božo Kovačević, former Ambassador Extraordinary and Plenipotentiary of the Republic of Croatia to Russian Federation and co-founder of Croatian Social-Liberal Party, explored in detail the various challenges and paradoxes we face. Everyone is influenced by social forces. But challenges set the leaders apart from the rest. The very response that a leader gives to an unfavourable situation is inspirational. During World War II, when the rest of Europe was lost, America still remained neutral, and the British found themselves all alone against the Nazis, Churchill told his ministers, “Gentlemen, we are alone. For myself, I find it extremely exhilarating.” One who finds exhilarating a situation that most others would find overwhelming is cut out to be a leader. Crises have made men and women rise to the occasion, and not only overcome the problem but convert them into great opportunities.

Kovačević's position that the existing leadership is unsatisfactory is echoed in the book by the American businessman Lee Iacocca, *Where Have All the Leaders Gone?* Iacocca was CEO of the American automobile manufacturer, Chrysler, a leader of amazing capacities. In 1979, Chrysler was in dire financial straits and experts unanimously wrote it off. The company brought in Iacocca in desperation. Iacocca took over as CEO, and what he saw in the company left him seeing double! The plants were plagued with problems, the less serious of which were absenteeism and disputes among employees. There was no discipline of any type. The problems seriously affected the efficiency of the company's operations and the quality of its cars. Chrysler had 100,000 unsold cars valued at \$600 million that were poorly made and deteriorating, a dissatisfied and alienated customer base, enormous overheads, and declining sales that were generating millions in losses every day. Chrysler ran out of cash—it came down to its last \$1 million at a time when daily expenses were \$50 million.

Iacocca set to work, first installing simple discipline. He fired 33 of the company's 35 vice-presidents who were not adding value to the company but doing the opposite. He removed layers of dead habits, vested interests, outmoded strategies, and inertia. He allowed long-suppressed ideas, energies and talents to rise to the surface. As a result of Iacocca's strategies, in five years, Chrysler moved from a loss of \$3.3 billion to a profit of \$3.3 billion – more money than it had earned in the previous fifty nine years in business. The company and its components were the same, but the leadership was able to inspire and bring about a paradigm change. Iacocca describes just what he did at Chrysler, when he says, "In times of great stress or adversity, it's always best to keep busy, to plough your anger and your energy into something positive."

"It is the response that is given to the problem that determines whether the conflict overpowers and defeats one, or elevates all."

Interestingly, Iacocca had earlier served as president at Ford, but he could not and did not do there what he did at Chrysler. Because the obstacles were so great and the pressure so intense, he was spurred to excel himself. This explains the appearance of great men and women, at the right place and time, during all epochal times in the past. Every freedom struggle has its leaders, every war its heroes. All revolutions – military, political, social, intellectual, artistic, religious, and now online – see the very people who are needed come to the forefront and take up positions. As if by coincidence, during times of peace and normalcy, these giants are nowhere in sight. The American independence movement saw the rise of George Washington, Benjamin Franklin and Thomas Jefferson among others. Franklin Roosevelt, Winston Churchill and Joseph Stalin came together to win World War II. Abraham Lincoln appeared to abolish slavery in the US, Nelson Mandela saw the end of Apartheid. The US has not seen a Washington or Lincoln in recent times, Britain has not had another leader of the stature of Churchill since it won the War. There is a correlation between challenging situations and the rise of leaders. Talent and potential are present in many people in all generations. But normalcy is not conducive for the expression of extraordinary capacities. Challenging times awaken the dormant capacities in the capable. They motivate and pressurize people, necessitate resourcefulness, and supply the strength needed. Outstanding leaders are those individuals who can apply the principle used in martial arts of using the momentum of the attack and turning it against the attacker, and convert a challenge into an opportunity.

Contradictions can become complements. Bohdan Hawrylyshyn, President, Foundation Vidrodenia and Founder, Bohdan Hawrylyshyn Charitable Foundation, while describing the work done in his Charitable Foundation during his lecture, emphasized the importance of knowing and respecting other cultures. The differences in cultures are a source of creativity in relations. It is only the friction that creates the spark. A voltage differential is needed for current to flow. The difference between individuals, organizations, societies and cultures provides this voltage differential. When cultures come into contact with each other, the difference is creative. It can be creative of conflicts, or it can be creative of peace and progress.

The leader uses this difference dynamically, for positive creativity. Every conflict has the potential to yield positive results. It is the response that is given to the problem that determines whether the conflict overpowers and defeats one, or elevates all. The leader gives the right response to the challenge, channels the energy that arises from the contradiction, and converts it into a complement.

7. Vision

Winston Nagan, Professor of Law, University of Florida and Director, WUC, commenced his lecture with the Socratic principle ‘Know Thyself’ that every effective leader should follow. He should have a clear idea of what he has set out to achieve, a vision. He identifies the subconscious aspirations and values seeking to emerge, identifies with and gives expression to them. Abraham Lincoln, Jean Monnet and Steve Jobs, men who lived at different periods and worked in vastly different fields all had this vision, and it was their vision that led to the successful fruition of their ideas. The ‘United’ in today’s ‘United States of America’ was Lincoln’s doing. He wanted to abolish slavery and unite the north and the south of the country that were divided over the issue. The Father of the European Union, Jean Monnet, is credited by John Kennedy to have moved Europe closer to unity in less than twenty years than it had done before in a thousand. When the hostilities of World War II had still not subsided, Monnet began to work for a united Europe. Steve Jobs of the consumer electronics company Apple Inc. developed products for which people discovered uses afterwards!

Colleagues humorously called Jobs’ persuasiveness a ‘*reality distortion field*’. His arguments seemed to defy logic, his demands were unreasonable. But every time he bent reality and managed what he set out to accomplish. At a time when the personal computer was hardly personal and was meant only for businesses, Jobs set about giving it a character. He clearly saw the power of its functionality, but sensed that people still looked upon it only as a very powerful and somewhat intimidating machine. He made it appear friendly, colourful, aesthetic and entertaining, and publicized it as a tool that could serve everyone. He created a portable digital player, the iPod, that could store hundreds of songs and be easy to use. When the public saw it, they decided that it was what they needed. Jobs had known it already! He repeated the same success several times, creating new industries, or raising the standards in existing ones. What looked to others a reality distortion field was the vision of the future to Jobs. When he needed Gorilla Glass for his smartphones, he approached glass manufacturer Corning Glass and told the CEO Wendell Weeks what he needed in six months. Corning Glass had developed that glass in the 1960s, but had quit making it since. Weeks informed Jobs that it was not possible to supply the required quantity within the time. Jobs, whose knowledge of chemistry and glass manufacturing was hardly a match for the CEO of the glass company, told Weeks, ‘Don’t be afraid. You can do it. Get your mind around it.’ To the surprise of Weeks himself, a Corning plant was converted almost overnight to make the glass, and the product delivered in less than six months! Jobs had dreamed boldly, a character of outstanding leaders, as Philip Koenig, Co-Founder & Vice-President of Praneo, a collaborative enterprise serving individuals and organizations, said in his talk on social insight and future vision. The leader goes beyond the conventional wisdom of the times and

dreams boldly. Then he does everything he can to bring his dreams to life, even any obstacle is taken as more positive energy for the dreams. He identifies with and gives expression to the unexpressed subconscious aspirations and values seeking to emerge. He knows that the unrealized is not unrealizable.

8. The Power of Values

Stories of all great men and women, successful organizations and societies have an element in common – positive values. A value is a high principle or an ideal of conduct. It is an internalized discipline. It provides an internal reference point to an individual or a group, for what is right, good and important. External challenges reveal latent capacities in us and motivate us to rise higher. Whereas a challenge is a compulsion of outer circumstances, values are voluntarily adopted.

Paradigm change does not simply imply getting somewhere else, but moving in the right direction and the right values are critical to this process. As Albert Einstein said, we cannot solve our problems with the same thinking we used when we created them. Transformational leadership for a new paradigm involves an evolutionary change in values.

One with a very high level of responsibility and self-restraint, two essential values of a transformational leader, was George Washington. Washington was indifferent to personal safety, and took responsibility for his country, its every state, and even every soldier who fought for its freedom. This needed patriotism, self-sacrifice, and an incredible store of strength. But what made him the first president of the independent country was his ability to restrain himself, even under pressing circumstances.

Abraham Lincoln said later, 'If you want to test a man's character, give him power'. Washington had the power. He led the continental army against the British in America, and had all the military power there was to be had. But when he wanted money for his army, he waited for the US Congress to sanction it. When his soldiers were hungry, cold and ill, he did not demand or take what he most urgently needed. He never once overruled the Congress or acted arbitrarily. He sought to establish a democracy in the US, where the military would serve under the elected government, and not override it. This great self-restraint that he expressed under trying conditions, even when his army was starving in winter, convinced everyone that he was a man they could trust with supreme power. After the country became free of foreign rule, the Americans did not want any more authoritarianism, even if it was only domestic. They were even reluctant to forge a central government, having got rid of a foreign monarch, they did not want another home grown one. Only one who would not misuse power would be acceptable. They had seen that the one man who could be absolutely trusted with power, regardless of the circumstances, was George Washington. So they unanimously elected him the President of USA twice, and would have done so again had he not refused the post the third time.

Physical skills direct physical energy in an organized way to generate precise movements that result in high performance and successful acts. Similarly, values harness, direct and

channel psychological energy to generate remarkable results in personal and social life. Successful individuals and organizations are marked by their values. Values motivate one to excel oneself, otherwise we would be satisfied with things as they are. When we set a high standard for ourselves, we achieve it, or at least excel ourselves in the attempt. The quality of the values and the intensity of our commitment to them determine the level of accomplishment. Transformational leaders bring about a change in values, in themselves, in others, in organizations and societies.

“The transformational leader does not hold all the reins, but empowers others.”

9. The Role of Organization

When humans and human activity are added together, the result does not follow a linear progression but grows exponentially in complexity. The whole is greater than the sum of its parts, as Aristotle said. Organization is central to human accomplishment. Not all the raging river water can produce one watt of electricity if it is not dammed, channelled through sluice gates and through the turbine. A leader, regardless of his individual capacity, depends on an organization to fulfil his vision.

As society evolves, organizations evolve too. We see a gradual change, sometimes smooth and rapid, sometimes through struggle, from autocratic to democratic, participative forms. Pierre Antoine Barraillé, Consultant and President of Praneo, in his talk about organizations called for a rise in the level of consciousness, in order to improve organizations and achieve a paradigm shift.

Ego-centric organizations consist of leaders and followers who think only of themselves, and the focus is inevitably on survival and the short term. Competition exists at all levels. A step higher is the social-centric setup where one moves from the self to thinking about those around. Collaboration replaces competition. A still higher level is global-centric, where one thinks of the long term and of the whole world. Collaboration is enhanced by compassion, and the rise in level enhances the quality of life and effectivity of all.

The person at the top of the pyramid no longer takes all the decisions, everyone takes decisions and is responsible. This participation releases great energy. As the organization model becomes decentralized and changes from the collective serving the leader to the leader serving the collective, organizations become more dynamic, innovative and creative. Leadership is distributed lower down the organization till everyone becomes a self-guided leader in some measure. In such evolutionary organizations, instances of which we already see in companies like Google Inc., the leader’s role is more to initiate and create space for others. There is a shift in the position of power.

10. The Power Equation

Of the three temptations which the devil offered Christ in the desert, wealth, power and glory, the true leader is free. Power is perhaps the most alluring of the three. Traditionally, power rested at the top of the pyramid. Teachers imparted knowledge in a one-way approach.

Rulers unilaterally decided the fate of countries. The Church dictated the rules of religion. Top-down organizations concentrated most of the power in the hands of a few. A paradigm change has to change the way power is distributed and wielded. The transformational leader does not hold all the reins, but empowers others.

A study of all great leaders shows that they never sought the top post. They followed their ideals, power gravitated towards them. Gandhi sought independence for India, he did not care for a political post. Abraham Lincoln's ambition was not the presidency of the USA. Jean Monnet initiated the process that resulted in the European Union, but he never held a high official position. Gorbachev said that if anybody within the Communist Party had objected, he would not have taken the top post. His primary goal was to revive the Soviet economy and reform its political and social structure. He was the first man in Russian history to have left the Kremlin without clinging to power. Every reform he initiated came at the cost of his own power, but he went on determinedly, till he finally declared his own office extinct, and in the process, liberated many peoples.

Mandela was a great leader who ended Apartheid in South Africa, what made him greater was the complete absence of any vindictiveness when he came to power. There was no resentment for the twenty seven years he was made to spend in prison, or anger at the unfairness of the old system. He ensured that the transition from apartheid to unity was without retribution and civil war. He ensured reconciliation and integration in society. His sentiments, "It is better to lead from behind and to put others in front, especially when you celebrate victory when nice things occur. You take the front line when there is danger," can belong only to a truly great leader.

11. Character of the Transformational Leader

The sparkling gemstone gets its sparkle from its many facets. The Leadership Course lectures and the panel discussion that followed each lecture identified different characteristics that form the many facets of transformational leadership. In order to facilitate the emergence of effective transformational leaders at all levels of society, we need to understand the character of the transformational leader, and the process that creates and nurtures leadership.

In his presentation, Alberto Zucconi, President, Person-Centered Approach Institute, Italy and Secretary General, WUC, called empathy one of the basic elements of the mind of the great leader. Leaders are people-centered, they are in touch with others. They recognize others' intrinsic worth, and respect and appreciate them. They are generous, taking pleasure in empowering and serving others. They get real satisfaction not from being in control, but in seeing the success of others. They feel love and compassion for all. Just as teachers know that they learn more by teaching, true leaders know that they grow by giving. They create other leaders. They listen to others. When Franklin Roosevelt was President of USA, the White House received between 5000 and 8000 letters a day. Members of the public felt connected to him and his wife, Eleanor Roosevelt. It was said of Roosevelt that in order to defuse a situation, whereas the previous president Herbert Hoover sent the army, Roosevelt sent his wife. The first couple were so in touch with the people. He began his radio program Fireside Chats

with the greeting, 'My friends'. One factory worker rushed home after work, explaining that he did not want to miss Roosevelt on radio. He said, "When the president takes the time to talk to me, the least I can do is listen!"

Apart from factual knowledge, effective leaders need emotional and social intelligence. They need to be able to recognize emotions, both in themselves and in others. They communicate well with others, and enjoy good relationships. They are able to get others to cooperate with them. They do not see in black and white. They are aware that there are times when the lesser evil has to be accepted in order to overcome the greater evil, a smaller good must be sacrificed for the greater good. They anticipate, prepare for and handle change. Leaders need to take risks.

Using the analogy of a captain of a ship, Donato Kiniger-Passigli, Head, Fragile States and Disaster Response Group, International Labour Office, analysed the many aspects of effective decision-making which is a key element of transformational leadership. In order to take right decisions, the leader needs to think i) strategically, and have a clear vision of what is and what needs to be done, ii) tactically, and know how the thing should be done, and iii) operationally, and execute the task. An aerial view, or a higher perspective, must be combined with a hands-on view or problem solving attitude, for effective decision-making.

Great leaders are people of immense courage. Physical courage that is required to face the enemy army is clear. It is courage of another type to break away from the norm and try out a new idea in science, art, writing or public policy. Winston Churchill said that courage is what it takes to stand up and speak; courage is also what it takes to sit down and listen. When the powerful Church says the earth is at the center of the universe, it takes courage to think of another possibility, and profess it. When the Second World War has just concluded, it takes courage to propose a collaboration with Germany, treating it as an equal. Finland has initiated a radical change in its education. Schools will do away with different academic subjects, and teach broad trans-disciplinary topics that touch upon all subjects. Instead of geography, history, political science and economics, students will learn the topic of the European Union, and all the subjects will be covered within the context of the EU, in an integrated way. It is courage again when a country with the top international test scores breaks away from a centuries-old model and embarks on a new course.

Visionary leaders are people of great conviction. During the Space Race with the USSR, John Kennedy announced that the Americans would put a man on the moon within a decade. When he made the commitment, the technology to land on the moon was not developed, nor yet the technology to return safely to earth. The costs involved were enormous. Still, his passion fired the project and NASA was able to send Neil Armstrong to moon and back within the decade. Great leadership needs passion. When the German Luftwaffe pounded Britain during World War II, the Nazis expected the island nation to surrender in six weeks. But after three months, they gave up in spite of the fact that they heavily outnumbered Britain in aircraft and experienced pilots. They had not reckoned with the amazing psychological determination of Britain and its leader Churchill who declared, "We shall never surrender." This deep conviction appealed to the depths of the English people. He said he had nothing to

offer but blood, toil, tears and sweat, and every one of his countrymen was willing to follow him and offer the same. In the face of such passionate resistance, the opponent has no choice but to give up.

Passion is necessary, but by itself is not adequate. History recounts a large number of people who had a clear idea of what they wanted, and wanted it with great passion, but the world would have been better off without such qualities in them. Hitler, Mussolini and Stalin were a few who were clear about what they wanted... So, no matter how far and how clearly one sees, if one is looking in the wrong direction, one leads society to the past, not the future. The right direction is required. Ethics and values provide this direction. They are messengers from our subliminal greatness that direct our steps towards wholesome progress.

All of us think, or so we think. Many of our opinions are borrowed from others, social norms set the limits and we stay safely within those boundaries, even at the level of thought. But transformational leaders really think – freshly, critically and creatively. They see the patterns that repeat in societies, the trends that evolve, they see problems beforehand. And then, they also transcend thinking and act on inspiration that is based neither on past experience nor on information. Franklin Roosevelt said that the economics he learnt at Harvard was not what he relied on when he went on national radio and told the people that there was nothing to fear but fear itself, and resolved the national banking crisis.

True leaders lead by example. There is a story about an Indian woman who sought Gandhi's help to make her son stop eating too much sugar. The small boy loved sugar, and no matter how much his mother scolded him, he would not stop. She hoped that he would heed Gandhi's words if not her own, and brought him to meet the leader. Gandhi asked her to return with the boy in two weeks. The lady obediently left, and returned in the said time. Gandhi then told her son that too much sugar is not good for health, and so he should stop eating it. The boy agreed, but the puzzled mother asked Gandhi why he had asked for two weeks' time before advising the boy. Gandhi told her that two weeks back, he was eating sugar himself! The leader expects or asks nothing of the followers that he is not willing to do himself.

Harry Truman said that it is amazing what you can *accomplish* if you do not care who gets the *credit*. Of all the people involved, Gorbachev was one of the few who never took credit for the end of the Cold War! The real leader is humble. He uses the word "we" more than he uses "I". Jean Monnet was motivated by altruism when he worked to create a united Europe. He sought nothing for himself, and was quick to give others credit for anything that worked out well. At the end of World War I, out of gratitude for his work, the British wanted to knight him. When he received the insignia, he sent it back, saying he did not merit the honour. The British, not understanding his humility, believed Monnet thought he deserved a higher award, so they promoted him to Knight Commander of the British Empire! Egolessness is a sure sign of a truly great leader.

András László, Founding President and CEO, GlobalVisioning.net, began his presentation in a novel fashion, with a meditative silence, which in itself is an integral part of a great leader. There is great power in silence, self-restraint and small significant acts. Franklin

Roosevelt remained preternaturally calm in the face of crises. He seemed in touch with the infinite. He never betrayed any nervousness when one upsetting news followed another before and during the Second World War. He confronted with equanimity the internal politics among his colleagues, the latest demand from Churchill for emergency aid, and the opposition at home to American involvement in the War.

One of the problems George Washington faced as a general fighting the American War of Independence was that the different states, in spite of being on the same side, did not always cooperate. Even as late as 1818, the colonial leader of Virginia John Randolph declared, 'When I speak of my country, I mean the Commonwealth of Virginia.' Sometimes the problem of the leader is not the hostility from outside but the fragmentation within. We have successfully cut up the earth and divided it amongst ourselves, on the basis of geography, ethnicity, language, religion, income level and so on. But we see more and more trans-border issues. When the sea level rises, it rises in South America just the same as in Asia. Religious fundamentalism and ethnic strife seem to be spreading regardless of national GDPs. Deforestation in Amazon rainforests leads to mountain snow melting in Nepal and flooding in India and Pakistan. On the positive side, any new development in any lab in the world reaches the markets all over the world. Ideas rapidly spread worldwide due to advanced telecommunications. An atrocity in any corner of the world is condemned, and sometimes even telecast live, worldwide. When a British newspaper reports that fishermen and sailors in the fishing boats in Thailand are treated badly, departmental stores in America and Europe threaten to stop procuring sea food from the country unless the conditions are improved. When a Pakistani girl insists that she will continue her education in spite of the threat of terrorists, the world comes to her support, and awards her the Nobel Prize. However, we continue to insist on our separateness.

An integrated view of the world and of all life that is absent from the majority can be seen in the leaders who have shaped and influenced the future of the world. Franklin Roosevelt saw that USA was not safe if Europe was not. Gorbachev understood the link between achieving international *détente* and domestic reform. Jean Monnet saw the possibility of cooperation and mutual benefit in the midst of hostility and conflicting purposes. He tied together the French and the larger European interest in ensuring peace and future security with the German interest in achieving political and economic rehabilitation. His proposals were a shock to many, but Monnet saw that to offer Germany equality with other European nations was essential for the common welfare.

Transformational leaders overcome dualistic thinking. They reconcile apparent opposites. Lee Iacocca tells the story of an engineer who worked with him at Chrysler. The engineer was a genius, but an argumentative and outspoken genius. For him the creative process was like hand-to-hand combat. He was not deferential or polite when he gave his opinion on another's idea. But he kept Iacocca on his toes, and the consequence was always an improved car design. Iacocca saw that, for the benefit of Chrysler's car, he could not afford to let his ego get in the way with the engineer. In business, politics or any other field, if the leader receives, or allows expression for only one point of view, his own point of view, then he needs to worry about the future. Lincoln never judged men by his like or dislike for them.

If someone had quarrelled with him, but happened to be the fittest man for a position in the Cabinet, Lincoln would put him in the Cabinet just as soon as he would a friend. Churchill included in his War Cabinet, members of the opposition. He said, 'Let prewar feuds die. Let personal quarrels be forgotten' so that energy wasted previously in infighting could be channelled into winning the common war.

The true leader takes consciousness responsibility, that is, responsibility for something greater than himself, greater than the authority he has. Like Gorbachev took responsibility for humanity by ending the Cold War, regardless of what it cost him personally.

Garry Jacobs, Chief Executive Officer, WAAS and WUC, in his concluding remarks stated that a complete act meets three psychological conditions – clarity of knowledge and full mental decision; enthusiastic emotional endorsement; and skilled execution through positive attitudes. If a single element is missing – one decision, one positive attitude or one skill – the act remains incomplete. For it to achieve a result, it must meet all the minimum requirements. The complete act has the potential for instantaneous miraculousness. It harnesses the forces of life to achieve results far greater than expected. With the right decision, attitude and action, a little Dutch boy can plug a dyke with a hand and save a whole country from flooding as in the legend of Hans Brinker. A single man can remove one brick and bring down the wall between the East and West as Gorbachev did. The transformational leader is one capable of performing a complete act in every one of his endeavours.

12. Educating Transformational Leaders

Sasa Kozuharov, Deputy Chancellor of the University of Tourism and Management, Skopje, Macedonia, and Pierre Antoine Barraillé explored the field of education. It used to be joked that our education has not changed much since the middle ages. If a physician from the 12th century were to enter a hospital today, he would faint. Whereas a teacher from that period would feel at home in today's classroom. But this joke is becoming more and more obsolete every year. 2012 was called the year of the MOOC, Massive Open Online Course. Today, though some call MOOC the missed opportunity for online collaboration, education is evolving along with the advancement in technology. Still, our education is nowhere near the desired goals. 10% of primary school-age children are not enrolled in school. Here, we are talking about 61 million of the world's future citizens. Between 2012 and 2015, 4 million teachers would have been needed to achieve universal primary education. The numbers look bleaker in higher education. 38% of all secondary school-age children are out of school, and 70% of tertiary school-age youth are not in college. These statistics cover only the gaps in quantity. Quality of education is a different issue altogether.

Standardized mass education will not produce transformational leaders needed for the future. Education that inculcates original thought, creativity, positive values and a view of the whole is needed. We need to educate entrepreneurship rather than employable skills, creative thinking rather than memorization, capacities for innovation rather than skills for production. We have enough gadgets to store data and process it. What we need are people who can see, empathise, think, discover and create. Apart from the academic subjects which are

undoubtedly of importance, the system should impart wisdom, responsibility, ethics, passion tempered by reason, tolerance and compassion.

“To give expression to the subconscious aspirations of society that are striving to awaken and act as a catalyst for their realization is the essence of transformational leadership.”

Our educational institutions have served us remarkably well, they have created great men and women who have shaped history. But they need to evolve to meet our current and future needs. Those who graduate from our schools and colleges should have a clear understanding of the integration – of all living things in the ecosystem, of all academic disciplines, of all countries and economies, of all of life. This will ensure that we do not create leaders who manufacture 70,000 nuclear weapons that are guaranteed to destroy earth and perhaps the moon in addition. Instead of going to war, future generations will be able to turn contradictions into complements. Economic disparity may reduce and well-being may become more universal. Modernization will not erase culture, globalization will not cost the earth its future. In order to get there, we need a paradigm change in education.

13. Global Leadership

Just as individuals can, organizations too can play the role of a leader. International organizations that transcend the nation state have the potential to take up global leadership, as Igor Kolman, Vice-chair, Croatian Committee on European Affairs, said in his lecture. These organizations have an integrated view of world issues and are better positioned to develop complete solutions. They have a huge knowledge base and the mechanisms developed for processing them are incredible. The opportunities are endless, all that is wanting is transformational leadership that will make these organizations take the lead.

The European Union has the potential to become a model and prototype for global governance. It can transform from a confederation and administration of nation states into a united community of peoples with a shared aspiration, vision and values – a wholesome whole. NATO can transform itself into a true instrument for global cooperative security rather than a security apparatus of a block of nations. The United Nations Organization has successfully prevented a third World War, but it can become more representative and democratic, and work to eliminate war of all proportions. A global New Deal is needed, as Tibor Tóth, Chief Executive Officer, Glocal E-Cubator, Austria said in his lecture.

Ask Google “how to solve the world’s problems”, and the search engine very optimistically gives 8,22,00,000 answers in half a minute. It is very heartening, but really, how many leaders, how many leading organizations seriously ask themselves the question, or have the answer? The World Academy of Art and Science, in formulating a New Paradigm for Human Development, is taking up an extremely ambitious project to address all critical issues facing

humanity. It is asking the question on behalf of the world, "Is there a solution to all our problems?" Through several conferences, research papers, and the World University Consortium courses, the Academy is attempting to lead the world to its future.

14. Essence of Transformational Leadership

Transformational leaders help raise the consciousness of individuals and society to enable them to realize more of their potential. They are defined by the values they embody and aspire to realize. To give expression to the subconscious aspirations of society that are striving to awaken and act as a catalyst for their realization is the essence of transformational leadership.

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Employment and the Unity of Social Sciences*

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Abstract

Employment and the unity of social sciences are discussed. The paper argues that employment is the simplest and the best indicator of human-centered sustainable and secure development.

1. Introduction

The 20th century is referred as the measuring century.¹ Indeed, the conception of Gross Domestic Product (GDP) and its operational definition were introduced in the 30s by Simon Kuznets. Later, various improvements of GDP such as Human Development Index (HDI),² Environmental Performance Index (EPI),³ Happy Planet Index (HPI),⁴ Globalization Index (GI),⁵ Competitiveness Index (CI),⁶ etc. were formulated.^{7,8} It is instructive to compare this flood of measurements with the development of the Standard Units in physical sciences. It took millennia before measures such as meter, kilogram and second could be precisely defined and internationally accepted, and the system of how to improve their precision could be defined and implemented. It is also important to stress that when Kuznets introduced GDP he emphasized its shortcomings. The inadequacy of the GDP has been pointed out by Jan Tinbergen, the first Nobel laureate in economics, and also by R.F. Kennedy in one of his last speeches:⁹ “GDP counts air pollution and cigarette advertising, and ambulances to clear our highways of carnage. It counts special locks for our doors and the jails for the people who break them. It counts the destruction of the redwood and the loss of our natural wonder in chaotic sprawl. It counts napalm and counts nuclear warheads and armored cars for the police to fight the riots in our cities.... Yet the GDP does not allow for the health of our children, the quality of their education or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials. It measures neither our wit nor our courage, neither our wisdom nor our learning, neither our compassion nor our devotion to our country, it measures everything in short, except that which makes life worthwhile”.

Information is very important and ICT has indeed introduced another age by allowing the present wealth of information to be developed and to be used, but information is not knowledge, and knowledge is not truth, and truth is not wisdom, and wisdom is not beauty – to repeat Frank Zappa. Let us not overlook the fact that the first metal to be used 11,000 years ago was gold which was used only for decoration, for beauty.

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Lord Kelvin emphasized the importance of measurement and stressed that unless we can measure (and define), the discussion is pointless. If it is correct that measurements relevant for social sciences are rather ill-defined, is it possible to develop the social sciences, notably economics? Again, comparison with physical sciences is useful: pyramids were built and Newtonian laws were formulated before meter, kilogram and second were precisely defined. We have to address important issues with whatever information we have at our disposal.

One of the most serious problems facing humankind today is low and inadequate employment. We argue that employment data are now the best socio-economic-political indicator to assess development – much better than GDP. It looks exaggerating in a world faced by catastrophe that could be caused by wars using weapons of mass destruction (WMD) and by enormous destruction of natural capital. Ecological Footprint^{10,11} is over 50% larger than the Earth's capacity, and in two decades we will need two Earths to tackle pollution and consumption of natural resources.

The data clearly show that many countries have a huge ecological footprint which is up to five times larger than Earth's biocapacity and their Human Development Index is essentially constant. Consequently, enormous damage to Earth and huge destruction of natural capital are done without any improvement in human development.¹² Comparison of subjective wellbeing and happiness with GDP¹³ also shows that at a GDP of \$9,000/capita subjective wellbeing reaches a plateau. Higher GDP/capita does not increase happiness. *Bulletin of the Atomic Scientists* put in 1947 on its front page a Doomsday clock at 7 minutes to Midnight. When the USA and the USSR tested their H-bomb, they moved the clock to 2 minutes to Midnight, and at the end of the Cold War the clock was at 17 minutes to Midnight. Terrorism as well as the destruction of natural, human and social capitals forced the Bulletin to put on January 14, 2014 the clock at 5 minutes to Midnight. Compounded by East-West tensions and ISIL aggressiveness it is likely that the next clock will be set even closer to Midnight.

Nevertheless, emphasizing low employment as one of the most serious failures of our current econo-political system is not an exaggeration! Employment rate in many European countries is below 75% (actually 75% is the EU goal), and many countries have employment rates not much larger than 50%. In addition to low employment there is also underemployment and misemployment, mal-employment compounded by unnecessary retirement affecting a large and constantly larger percentage of population. Apparently, the social structure is wasting more than 30-40% of human capital, and it looks like we are not even concerned about it. Throughout human history human capital has played a very important role even when its physical aspects were mainly used.

Before proceeding further we have to answer two questions. First, how important is human capital? Is it just a minor fraction of the total sum of all capitals: natural capital – resources, biodiversity, agriculture, water, etc, and human-built capital – roads, buildings, money, etc.? A recent study by Sir Partha Dasgupta and collaborators has shown that human capital is dominant.¹⁴ Table 1 summarizes results presented in *The Economist* in 2012.

Table 1: Real Wealth of Nations (2008): Human, Natural and Human-made Capital

USA	=	\$ 117.8 trillion	(HC = 75%)
UK	=	\$ 13.4 trillion	(HC = 88%)
Saudi Arabia	=	\$ 4.9 trillion	(HC = 35%)
Brazil	=	\$ 7.4 trillion	(HC = 62%)
Russian Federation	=	\$ 10.3 trillion	(HC = 21%)

(1 T\$ = \$1012, values in parentheses list the percentage of the total wealth of each nation that is contributed by human capital)

Obviously, human capital is very important. The second question is how reliable are measurements of human capital? Can human capital and natural capital be expressed in dollars even if they are corrected for inflation by purchasing power parity (PPP), and what does PPP mean in a global world? The value of the human capital can be qualitatively assessed by evaluating historical progress. The very fact that contemporary world witnesses numerous improvements in all domains of human activities – science, technology, life expectancy, better international and national laws, higher GDP/capita and better quality of life – indicates (though it does not convincingly prove) that human capital is increasing. Garry Jacobs and I have argued in a previous paper that human capital is self-augmenting by a bootstrapping process.¹⁵

2. Two Cultures and Three Cultures

On May 7, 1959 in his now famous Rede lecture entitled “The Two Cultures and The Scientific Revolution,”¹⁶ C.P. Snow emphasized that science and art were becoming two different cultures. It looks like the split is getting worse nowadays: split into three cultures,¹⁷ i.e. natural sciences, social sciences, and arts and humanities. However, the separation of scholarly/scientific disciplines is barely 200 years old and the term “scientist” was coined in 1833. In 1882 another Rede lecturer M. Arnold discussed whether classical education is still relevant in an age of scientific discoveries. This was the time of a debate on the theory of evolution and physics just accomplished a fraction of its revolutions. Nobel laureate Sir Andrew Huxley recalls that when he was a student and wanted to switch from classics to physics the headmaster of the Westminster College accused him of “forsaking virtue for pleasure”.¹⁸ The view that higher education overcomes these “cultural” splits was outlined in a keynote address at the International Association of Universities meeting in Zagreb in 1982.¹⁹ Recently, the World Academy of Art and Science established the World University Consortium with the aim to contribute to the fulfillment of higher education. As formulated by WAAS Fellow and Academia Europaea Former President S. Strömholm, “University has a mission and a responsibility which goes far beyond the task of providing industry with efficient employees, marketable ideas or science-based solutions.... The mission is the production of mature, independent, critical, responsible personalities, who are not tools in the service of Church, State, party, business or trade unions. The scholars are treated with respect if they maintain their dignity and uphold their own standards against those of the world at

large, in those cases where the conflict emerges, and with contempt, and soon enough as simple goods, if they accept the rules of the outside world.”²⁰

Natural sciences proceed through unifications. Newton unified heaven and Earth – circular motions along “perfect” circles and along straight lines, Faraday and Maxwell unified electricity and magnetism and as a bonus found the speed of light and consequently, optics. Quantum physics united physics and chemistry, and it seems biology was influenced as well, as Jacques Monod describes in his 1970 book *Chance and Necessity: Essay on the Natural Philosophy of Modern Biology*.²¹ Unification in physics proceeds on and on toward a possible Theory of Everything, but as soon as we think we have accomplished describing (not necessarily understanding) “everything”, that “everything” reduces to a small fraction, i.e. less than 5% of our universe,²² possibly just one of the infinite number of universes.²³ [The fact that our universe is fine-tuned to the existence of humans led to the idea of infinitely many universes where one has laws and basic constants fine-tuned to our existence]. On the other hand methodology and pattern of thought of physics and mathematics infiltrate into many scientific/scholarly activities. Several new disciplines are emerging such as astro-archaeology, bio-archaeology, and anthropology (anthropology for quite some time was split into physical and cultural anthropology). Most Nobel prizes in economics were given for econometrics and the first one was given to a former physicist Jan Tinbergen. This tendency is quite old and as early as Spinoza’s *Ethics*. Attempts were made to use axiomatic geometrical approach to formulate social sciences.

The thought pattern of physics and mathematics is at least to some extent based on the fact that basic components of the physical universe (“elementary particles”, basic constants and laws) did not change for almost 13.7 billion years (proposal by Dirac to explain a huge ratio of strengths of the electromagnetic to gravitational forces by assuming that they change with time is experimentally proven to be incorrect). On the other hand within physics and mathematics, scientific disciplines develop which have significant implication for social sciences. Examples are: complexity theory (the property of a real world that is manifest in an inability of any formalism being adequate to capture all of its properties. It requires that we find distinctly different ways of interacting with the system. “Distinctly different” in a sense that when we make successful models, the formal systems needed to describe each distinct aspect are not derivable from each other (B. Rosen, D. Mikulecky, Merrill Flood, S. Kaufmann and Murray Gell-Mann’s *The Quark and the Jaguar: Adventures in the Simple and the Complex*)), fractals, game theory (John von Neumann and Oskar Morgenstern, 1944) and Catastrophe theory.²⁴

Einstein stressed that the most incomprehensible thing about the world is that it is comprehensible, but M. Rees at the Academia Europaea Annual Conference in Liverpool in 2008 questioned: “Are we capable of understanding the physical universe?” Eugene Wigner in his article published in 1960 stressed the unreasonable effectiveness of mathematics in the natural sciences:²⁵ “Enormous usefulness of mathematics in natural sciences borders on the mysterious and there is no rational explanation for it.” It is not surprising: that physicists were led to introduce fuzzy logic (i.e. certain to some extent), that arguing with a friend N. Bohr said, “You are not thinking, you are just being logical!”, that K. Gödel showed that

there are truths beyond proof and R. Penrose wrote that “reason destroys itself”,²⁶ that Einstein claimed that “common sense is the collection of prejudices acquired by the age of 18”, that Pascal claimed, “We know the truth not only by reason, but also by our heart. It is through the latter that we know the first principle, and reason – which has nothing to do with it – tries in vain to refute it.”²⁷ Is common sense that segment of our thought that is generated by evolution, and can we ask the unthinkable – for e.g. in the third generation warfare, where plans are prepared for unthinkable attacks? Of course, art knew it much earlier.

“Einstein stressed that the most incomprehensible thing about the world is that it is comprehensible.”

Dostoyevsky wrote in *Notes from Underground* that blind faith in reason is dangerous. “The most destructive and dangerous of all religions is the newfound faith in the power of reason and perfectibility of man.” Humans cannot live by rational thoughts alone.²⁸

3. Social Sciences

Social sciences are focused on human beings. Contrary to unchangeable “elementary particles” and physical laws, humans undergo biological and cultural evolution. Humans change and they change the world they live in, so the current geological epoch could be appropriately called Anthropocene Epoch.²⁹ Our biological evolution accelerated 100-fold in the last 5-10,000 years. Driving forces are growth of the world’s population and changes due to agriculture and all other scientific-technological developments (Success of mutation causing to digest lactose over the last 3,000 years due to genes controlling the glucose metabolism in the brain is possibly essential for the human brain growth to the size twice that of chimpanzee, our nearest cousin, and possibly suggests why humans have diabetes and chimpanzees do not). Ongoing and future developments are becoming much more pronounced, starting with a pacemaker, implants and transplantations to stem cells, cerebral organoids and regenerative medicine: flat (skin), tubes (blood vessels), hollow organs (bladders made from implanted patients’ own cells), solid (kidney, heart), and synthetic biology (design and construction of new biological devices and systems that do not exist in the natural world and adapting and improving those that exist in the natural world, e.g. sensitivity of sharks to magnetic fields) to be followed so that by 2020 nanomachines will be routinely used in medicine – entering the bloodstream to feed cells and extract waste, by 2030 mind uploading will be possible and by 2040 human body 3.0 could alter its shape and organs can be replaced by superior cyber implants. Converging technologies such as nanotechnology (manipulation with atoms), biotechnology (manipulation of genes), information technology (manipulation of bits) and cognitive neuroscience (of neurons) will be integrated.

It is doubtful whether social sciences developed 100 to 200 years ago are adequate for our times. A brief outline of some social sciences follows:

Language is one of the most important “innovations”, but grammar and linguistics developed much later. It was Panini in 5th century BC, India and Sibawayh in the Arab world in 760 AD, who developed grammar, though the first to use the word “grammar” was the school of the Library of Alexandria. Modern linguistics was developed by W. von Humboldt and notably by Noam Chomsky.

Mercantilism (16-18c) and Physiocracy (18c) are among the first schools in economics, though economic problems were addressed earlier by Aristotle, Xenophon, Kautilya, Th. Aquinas and Ibn Khaldun. Adam Smith (his *Wealth of Nations* was published in 1776), who called himself a moral philosopher, is credited as the first economist and notably the first political economist, followed by T. R. Malthus (1798 – year indicates publication of their most important work), David Ricardo (1817), John Stuart Mills (1848), Karl Marx (1867), Alfred Marshal (1890), J. M. Keynes (1936), M. Friedman (1970), Jan Tinbergen (first Nobel laureate in economics in 1969), Simon Kuznets (1971 NP), J. Schumpeter (1942), J. Stiglitz (2001), P. Krugman (2008), A. Sen (1999) and N.N. Taleb who introduced Black Swan (for studies on uncertainties D. Kahneman got the Nobel Prize in 2002).

Sociology was studied by Confucius, Plato and Ibn Khaldun, and it is quoted in the Doomsday Book of AD 1086. Modern sociology started with A. Comte (1798-1857), K. Marx (1818-1883), Herbert Spencer (1820-1903), Max Weber (1864-1920) and most notably Emile Durkheim (1858-1917) who first set up the department of sociology at the University of Bordeaux in 1895.

Thales, Hippocrates as well as many scholars of ancient China, Persia and India studied what we now call psychology. Modern psychology has its roots in the works of W. Wundt in 1897 in Leipzig, with W. James, Sigmund Freud and Carl Jung, known for their work on psychoanalysis followed by E. Fromm, E. Erikson, B.F. Skinner, A. Maslow and Ch. von Ehrenfeld and later Kurt Koffka and Wolfgang Köhler, who are known for their Gestalt theories.

Anthropology is a study of humans and therefore a very wide area. It has developed into many branches particularly after the work of Franz Boas and B. Malinowski at the turn of the 20th century.

And then it comes to politics, which was referred by Aristotle as a master science. Politics is a mixture of art and science, intuition, emotion, facts and visions, leadership and collective endeavor. It seems to me that the most appropriate quote to open and to conclude the discussion of politics is from F. Schiller written in 1796: “Our century has given birth to a great epoch, but the great moment finds a stunned generation and even more stunned politicians.”³⁰ “It is absurd to believe that everything is going to change, but politics will and can remain the same.”³¹

Each technological development survives only when accepted and used by humans, therefore, engineering and technology have their matching counterpart in the social sciences. Since, as Julian Huxley stressed, humans are now in charge of evolution, understanding contemporary evolution implies understanding human behavior, i.e. “contemporary” evolution becomes part of social science: “Evolution on this planet is a history of the realization of ever new possibilities... through the new knowledge. It has defined man’s destiny and responsibility to be an agent for the rest of the world in the job of realizing its inherent potentialities as fully as possible. It is as if man had been suddenly appointed managing director of the biggest business of all, the business of evolution. What is more, he can’t refuse the job.”³² According to Aurelio Peccei, “Humankind became the basic factor of

change in this corner of the universe.”³³ And similarly, robotics, ICT and artificial intelligence are merged with psychology, sociology, economics and politics.

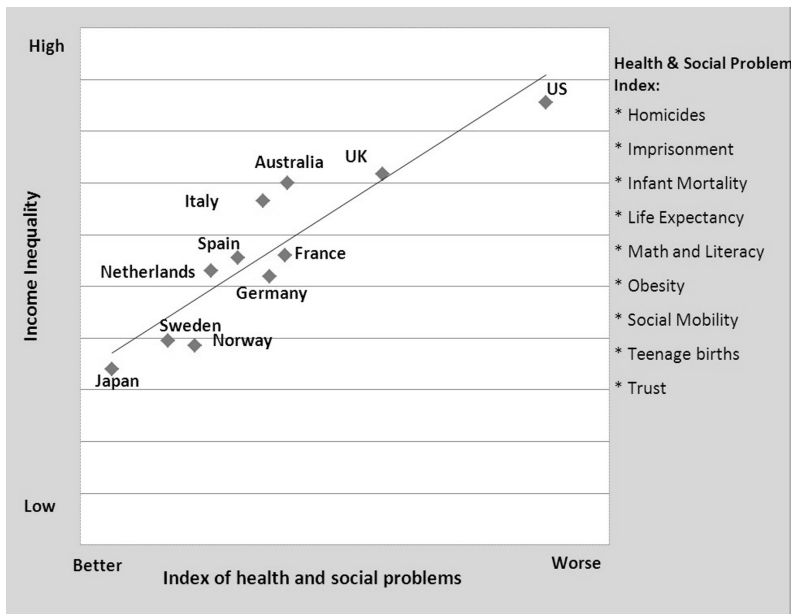
4. Paradigm Change

The concept of paradigm (*Παραδειγμα*) was used by Plato in his book *Timaeus* to mean a pattern used by God to create the universe. It was again used more than two millennia later by Th. Kuhn in his *The Structure of Scientific Revolutions*³⁴ to describe “universally accepted scientific achievements that – for a time – provide model problems and solutions for a community of practitioners.” ‘Paradigm’ means a pattern of activity and an accepted worldview. Mattei Dogan argued in 2001³⁵ that there is no paradigm in social sciences since concepts are polysemic (having a number of meanings and understandings). On the contrary Larry Laudan (1977) and M.L. Handa (1986) introduce social paradigms.³⁶

5. Employment

Full employment is desirable and possible.³⁷ Employment increases human capital and decreases income inequalities. Inequalities are negatively correlated with most socio-economic-health indicators such as life expectancy, infant mortality and crime rate, and decrease Human Development Index (HDI) (see Fig. 1³⁸ and Table 2). Taking inequality into account HDI decreases 27% for Arab States, 33% for Sub-Saharan Africa and 30% for South Asia. Loss is largest in education (57%, 32% and 50%, respectively) and in health (24%, 45%, 34%, respectively) sectors.

Fig. 1: Income Inequality vs Health and Social Problems Index³⁹



In addition inequality freezes human-made capital. Obviously, having several hundred shirts and ten cars freezes all those unused and unnecessarily consumes material resources and increases pollution.

Gandhi stated that there is enough for human needs, but not for human greed. Adding to greed are unnecessary “needs”,⁴⁰ needs enforced upon us through advertizing agencies.

Human needs include spiritual, emotional, artistic, intellectual, physical and material needs, and fulfillment of many of them requires work – often jobs by other people. If there are more jobs needed than people, then full employment is possible, even demanded. Of course, it requires that people have skills and knowledge, and that again increases the need for employment – procedure to provide skills and knowledge, i.e. process we call education. Science and technology have introduced a competitor to humans – robots and various other “agents” that do human work. We already witnessed that the percentage of people involved in agriculture dropped from over 60-70% to just few percents during less than 100 years, and we witness that many other jobs are disappearing. Actually, during their lifetime our children and grandchildren will have to change their “professions” several times.

Several developments are characterized by very different time scales. Our life expectancy is about 70-80 years (life expectancy doubled in about 100 years and is still increasing), knowledge doubles every 5-10 years and new technologies are introduced at the same rate (e.g. Moore’s law), demography will superimpose the demographic transition (i.e. decreasing fertility rate in many countries to below 2.1) until 2060 increasing global population close to ten billion producing migration and cultural problems. These clashing time scales add to already alarming destruction of natural, human and social capitals and to highly vulnerable political structures. Where does the world go from now? Theoretically possible future scenarios are: 1) static, 2) business-as-usual, 3) incremental and 4) paradigmatically changing world. Static world is impossible since the rate of change is increasing and drivers of change are imbedded in our society. Business-as-usual is not sustainable and leads to disaster. The question is whether incremental changes are sufficient or a paradigmatic change is needed, or most likely a combination of both – incremental and paradigmatic, producing essentially a paradigmatic change (Notwithstanding quantum physics and theory of relativity, classical physics remained valid in a narrowly specified domain). Insights into human needs suggest that the “jobs” will undergo major paradigmatic changes. We need and will need less and less production of material goods (they are destroying natural capital anyway, polluting the environment by enormous waste and adding little to our quality of life) and we will need more and more of knowledge (just to be a citizen of a democratic country an enormous knowledge is required unless we plan to surrender to manipulation, dictatorship and self-destruction led by stupidity), more research to understand the world we live in and more and more creative, revolutionary and out-of-the-box ideas to achieve a sustainable, human-centered secure world. As Don Giovanni says, “To drift is to be in hell, to steer is to be in heaven.” (G. B. Shaw).

Table 2: Indicators of Development

Country	HDI _r	(GNI-HDI) _r	IHDI _{los}	GINI	LS (0-10h)
r-ranking, IHDI _{los} decrease due to inequality					
Germany	5	10	6.9%	28.3	6.7
Austria	18	-5	6.6	29.2	7.5
Slovenia	21	12	5.8	31.2	6.0
Croatia	47	4	15.1	33.7	5.6
RusFed	55	0		40.1	5.4
MontN	52	24	8.0	45.3	5.5
Serbia	64	16	8.0	27.8	4.5

Socio-economic and political world changes quite rapidly now and social sciences describing specific aspects are not adequately explaining the changes. If one appreciates that social sciences deal with a society composed of humans, then a human-centered approach could lead to unity of all social sciences. Achievements of social sciences during the last century are enormous (just as physics achieved a lot during the 19th century but still two minor clouds led to quantum physics and theory of relativity), there is an increasing amount of observation, data and analyses, but we still lack a reasonable basic theory (and as Boltzmann stated, “Nothing is as useful as a good theory”). Physical theories are guided by experimental data and the imperative of beauty since we strongly believe and have evidence that Nature is beautiful. Social human-centered theories can be guided by essential characteristics of humans, also expressed in all major cultures and religions:

1. Humans have rights and responsibilities, and our basic right and responsibility are to LIVE and assure that future generations live! *Raison d’humanite*.⁴¹
2. Humans are curious – *Sapere aude* – as stressed by Aristotle in the opening words of his *Metaphysics*. We should never succumb to vanity and believe that we know everything – our knowledge and understanding are very small and inadequate.
3. Humans are social beings living on Earth. Preservation of natural capital is our duty.
4. The Golden Rule is imperative: even more strongly formulated: Love thy neighbor!
5. Humans have to be active and wisely decide when and how to be active.

Recent progress in sciences indicated Nature-Nurture Interaction (Life sciences-Socio-political-economic sciences).⁴² Comparison of identical and fraternal twins shows the heritability of politically related behavior. Gene DRD4 is implicated in the development of political affiliation. Those with a variant of DRD4 called 7R and also a large network of friends acquired during adolescence tended to be more left wing (in the USA). However, there is no particular gene for left-wing, but inclinations. Political action is the collective

expression of some primal biological motives: survival and procreation. Genes seem to assist in deciding which opinions an individual will find most attractive to cling to. It looks like there is a sort of granularity, the need to accept partial rather than universal explanations for biological phenomena. A person's gene can propel him/her more easily in one direction than another. Her/his free will may be a little freer to turn right than left, or vice versa.

It is not US vs. THEM, but rather WE and THEY.⁴³ This is the only and the best way to overcome crises, to eliminate threats and to assure prosperous, sustainable and secure development.⁴⁴ "Difference is our greatest opportunity," wrote B. Clinton echoing Hungarian King Stephen I. "People are the real wealth of nations. The basic aim of development is to enlarge human freedom and choices so that people live full and creative lives. This must benefit everybody equitably."⁴⁵

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The Double Helix of Learning and Work*

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Editors' Note

The Double Helix of Learning and Work by Orio Giarini and Mircea Malitza is a report to the Club of Rome first published by UNESCO in 2003. It advances fundamental paradigm-changing ideas in the field of education. Drawing inspiration from the double helix structure of DNA, the authors seek to strengthen the relationship between education and employment in order to bring 'The Knowledge Society' within reach. This article is a slightly abridged version of the fourth chapter of the report. The last and the next chapter will be published in the next issue of *Cadmus*.

Chapter 4

“The Knowledge Economy and Work”

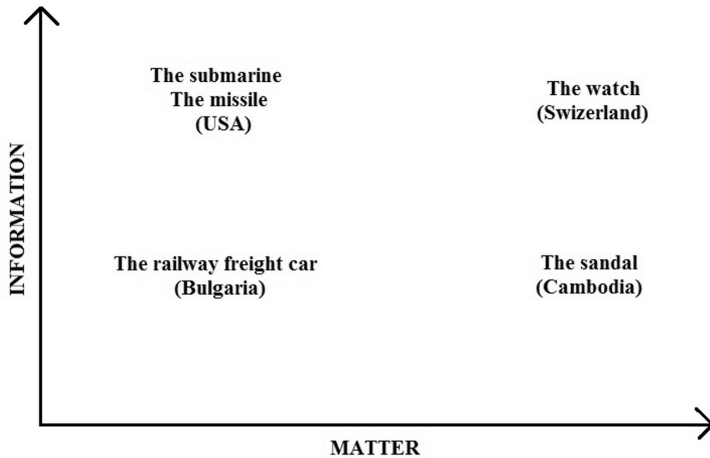
4.1. Knowledge as a Commodity

A Swiss professor at the Polytechnic University of Zürich used to draw a large rectangle divided into four smaller boxes on the blackboard. There were also two axes, one for the matter which entered the composition of the products specific to a particular country and the other for the information incorporated into those products.

According to the diagram, a submarine contains a large amount of steel, but it also has an impressive control panel. The great world powers build their military capability on products that combine large quantities of energy for propelling large payloads over very long trajectories with small quantities of energy to show the way. A watch uses little substance and energy but its fine, precise mechanism provides vital information on the flow of time. A railway freight car has massive wheels, a chassis, and wooden or metal sides, but it has neither a “brain” nor command mechanisms. A sandal made of straps holding a sole is the manual product of a worker who puts very little matter and only a grain of intelligence into his work.

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Figure 1. Relative amounts of matter and information/intelligence in the composition of products made in given countries



One could write “intelligence” rather than “information” on the left axis of this figure so as to account for the desire of humankind to create products which are new and different and which reduce human effort, *e.g.*, through automation.

There is a new trend today according to which knowledge replaces information or intelligence. The “knowledge economy”, in which we are living, assigns a new and supreme importance to knowledge.

Does this modification mark a turning point in economic thinking? One might as well cast doubt on the novelty of the concept. It is simply necessary to remember that, three hundred years ago, the Industrial Revolution occurred when people learned how to make machines. For the past two centuries, especially in the last century, industry has been science-based. Nevertheless, the novelty is great if one considers the relative weight of matter and knowledge incorporated into products.

The importance of classical factors (among which knowledge was not even mentioned) in the production of goods has obviously declined. The resource-based industry that characterized the first significant part of the history of manufacturing and shaped national strategies has lost its cogency. Japan is a major player in the steel market without having significant deposits of iron ore or of coal. Prices for natural resources fell 60 percent between the mid-1970s and the mid-1990s because modern products simply use smaller quantities of raw materials. To be capital intensive is not a condition for commercial success, since capital is widely available. Moving toward labour-intensive production is no longer a trump card in an era when skilled, and, consequently, well-remunerated labour is more important when one

has to run quasi-automated industries. In exchange, a new term has emerged in the equation of comparative advantages, something that counts more than the older factors and makes their location less relevant. As one author put it, "Today knowledge and skills now stand alone as the only source of comparative advantage" (Thurow, 1999).

"The effectiveness of knowledge is given by its movement. It does not produce anything when it lies still; it yields everything when it is intensively used."

This new commodity called knowledge, which is incorporated into the structures of all goods, can be compared to money. This comparison is suggestive of a puzzle: knowledge is like money, but it is not money: it can produce money and can be obtained for money. The universality of knowledge means that no goods can be produced and exist without knowledge. Knowledge has a relationship of mutual penetrability with goods, much like the complete interchangeability between money and goods.

The same as in the case of money, the effectiveness of knowledge is given by its movement. It does not produce anything when it lies still; it yields everything when it is intensively used. Its behaviour should be considered according to the derivative of the function or the speed of circulation. There is erudition that is valued for itself; however, it is less valuable than a certain hidden treasure. The value of money, resulting from the use of this treasure, has been recognized since biblical times. If Molière mocked the sterile exercise of avaricious hoarding, society did not repudiate the knowledge owner in the same way. A man of knowledge was considered the educational ideal.

In spite of these qualities, knowledge cannot either be appropriated or expropriated, as happens in the case of money. The brain is the safest repository of knowledge, as long as it is not expressed and circulated. The same thing happens to both knowledge and information: if circulated, it does not get depleted when it is shared, and any of its applications may provide opportunities for growth or development.

Globalization has created networks that defy time and space, allowing for the quasi-instantaneous transfer of money or pieces of knowledge (information) anywhere on the planet, no matter how far away. Information is, evidently, an indispensable support for knowledge, while knowledge is not reduced to bare information, but it contains a surplus of explanations of the facts, of understanding, of control of the natural, physical, or social processes, and of applicability and foresight. Broadly speaking, knowledge is science enriched with tacit, artistic, or logically informal norms. Knowledge is the first human activity that has reached the status of universality, most likely followed by trade and types of exchanges. Eluding restrictions or barriers, it keeps seeping into the places where attraction and demand are the greatest.

Another comparison might be made between knowledge and goods. Although it is initially stored in individual human brains, knowledge is produced in a highly interactive and

co-operative social melting pot. After it has been partially or systematically enounced, it becomes a public good that lends itself to general distribution. Everybody can drink from the “fountains of knowledge”. We assimilate knowledge in public or private schools, we explore it on the Internet using a personal computer, we discover it by reading, studying, experimenting, and judging.

What kind of public good is knowledge? Its first feature is that it is not subject to rivalry. One can have knowledge without depriving somebody else of it. Information has the same feature. But only disembodied knowledge or other objects of thought are purely exempt from rivalry. The moment knowledge is embodied or encoded in material forms, access to it may be subjected to commercial logic. It will have a cost and a price. It takes resources and time to embody knowledge in people or to apply it in products.

The second feature of knowledge as a public good should be its *non-exclusiveness*. One cannot exclude a person from the benefits of public facilities or from enjoyment of universal basic rights. But a qualification also intervenes in the case of knowledge. Owing to its power and the benefits it produces, knowledge is protected as a special form of ownership: intellectual property. Patents, licenses, and any other form of protecting property rights make knowledge partially excludible, and only those who can afford to pay its price are entitled to enjoy it.

Knowledge is therefore a public good, to some extent, but not totally and purely one. Were it to be completely excludible, companies would no longer invest as heavily in research; publishing houses would no longer print books; and costly scientific events would not take place at all. These remarks on knowledge as a public good lead to unsolved ambiguities and dilemmas, which are likely to become even more complicated in the era of the “knowledge economy”.

Nobody has ever changed mathematical theorems. This assumption of stability has applied to all statements resulting from serious research in the natural sciences or in societal phenomena. The moment there is an application leading to the production of tradable goods (e.g., pharmaceutical products), knowledge is protected by law and is capitalized like any private good. Moreover, one witnesses a phenomenon of *rapprochement* between the pure and the applied sciences. Their borderlines become blurred or fuzzy. Applied research laboratories have also begun to tackle theoretical issues, even though the results of such investigations pertain to intellectual property rather than to the public good. Those countries that understand the need to maintain a high level of research in the pure sciences have found it necessary to use clever stratagems in order to justify the funding of such research programmes. In the United States, the military have contracts with mathematicians specializing in pure geometry on the basis of a putative interest in potential applications.

Public schools operate in response to the constitutional requirement to provide education for all as a universally recognized right. The State invests public funds to produce people endowed with knowledge. Companies, however, regard that supply of trained people as a free input for their productive activities. Moreover, some states have built successful industrial

policies on the conversion of the scientific results obtained by other states into highly profitable applications. There are countries that rely, as a matter of policy, on the recruitment of foreign specialists who have been trained at a high cost in their countries of origin.

In the realm of education, there is continuing tension between the duty of the state to distribute and to transmit knowledge as a public good and the real chances that acquired knowledge will enter the circuit of private goods and protected property. Companies may occasionally be unhappy with the inadequate training that the personnel they require may have received in the public education system; therefore, they organize corporate training schemes for their own use, which are characterized by high costs and excludible knowledge.

The ever-increasing costs of public education, which, together with the health system, have become large consumers of the State budget, call for a comprehensive reconsideration of the educational process. From a different perspective, the major consumers of knowledge, especially in the public sector, are very interested in finding a workable solution. The people at large also expect a new approach. They aspire for emancipation and well-being in accordance with the new promises of human knowledge.

In the course of this century, a triad of decision-making and sponsorship is likely to emerge in the educational sector involving the government, the business community sector, and civil society. The new formula should also include parents, teachers, and young people. For the time being, this trend can only be detected in the convergence of the processes that influence current developments in schools: lifelong learning, work-related education, recurrent and alternative education, the modularization of curricula, the information and communication technologies, distance learning, and, ultimately, individual curricula and itineraries in the work/learning space.

We have to admit that most of the literature on the subject of the knowledge economy uses the term with different connotations. From a limited perspective, the knowledge industries are primarily those industries the major product of which is knowledge itself: software, biotechnology, and information technology hardware. The corresponding professions are engineers, scientists, programmers, and designers. Second, knowledge industries comprise units that are involved in managing, processing, and distributing information, such as telecommunications, banking, insurance, advertising, law, medicine, and education. They employ a broad range of professionals including managers, lawyers, bankers, and teachers.

From a broader perspective, the knowledge economy has been so described because it recognizes the primacy of the knowledge factor in the production of goods. This description applies in particular to the large industries, called by some authors "man-made brain power industries" in order to distinguish them from the classical industries, based on resources, capital, or labour. Usually, knowledge and skills are mentioned together. The synthetic (and not the analytical) skills seem to be the most important, since they are capable of putting together and capturing the synergy of all intellectual factors such as invention, design, manufacturing, services, and marketing, which are the premises of successful production.

There is considerable agreement on the role of tacit knowledge in craftsmanship. The intense familiarity of workers with the objects pertaining to their work, proper apprenticeship,

and experience are more relevant to the final result than are given rules or formal training. The winner in this case is intuitive learning by doing rather than the application of systematic recipes.

The knowledge required by any of the industries, services, or productive activities (not only by those designated as knowledge industries) can also be classified into two strands. We might wish to call one of them “Schumpeterian”, since it addresses the entrepreneurs and in view of the fact that it was Schumpeter who first talked about them. This strand is a more élitist one that operates at the level of major decisions that determine the ideal combination of the numerous ingredients going into process technologies. The other strand goes to the basic level of the shop floor, where the workers can use their knowledge-based competencies to control processes, identify errors, increase efficiency, and develop initiatives.

Seldom has education held such a central place in the minds of reformers and of society as has been the case with the emergent knowledge economy. Learning has entered the mainstream of wealth-creating factors in society and of self-fulfillment in individual lives. The knowledge economy, however, reopens the problems of equal chances, of the right to education, and of the responsibilities of society, of the State, and of companies to organize adequate educational structures. At the beginning of a new century, we see the picture of an abundance of experiments and experiences, most of them redundant and costly, lacking orientation, and hardly lending themselves to effective classification.

4.2. Innovation

The key word for the life of work in educational discourse, the supremely persistent demand and cardinal virtue, is “innovation”. The classical qualities (*i.e.*, skills, training, the work ethic, discipline, and teamwork) are not overlooked, but the ability to invent, to create, and to innovate is fundamental. The entrepreneur and the manager know that competition cannot only be confronted with lower prices and higher quality, but also with novelty. The product has to be labeled as “new”. The managerial school is not discouraged by the innovative trend.

Creation was traditionally assigned to a spark of genius or to an outburst of talent, inexplicable, non-transmittable, and inimitable, attributable only to hazard or to divine grace. Such theoreticians of management as Peter Drucker claim that innovation can be learned in the same way that one acquires knowledge and skills. They argue that, in addition to educational algorithms and the networks, there is another informal, invisible, and inexplicit way to acquire an ability to innovate, which is valid for the entire sphere of knowledge.

In order to better understand the demands of production and services, it would be edifying to examine more closely the contents and the nature of innovation. Any process, no matter how advanced, can be further improved. Incremental ameliorations of performance and efficiency occur slowly and tenaciously. The same happens in sports in which established records are constantly beaten by subsequent competitors. It is a universally valid, incremental, and cumulative method, which is used daily in professional or personal life. There are

handy means to apply it, such as a pertinent remark, the repositioning of two pieces, the identification of the cause of a frequent error, or simply driving home a nail.*

Small remedies can have major effects. It has been demonstrated that it makes sense to delegate responsibility down to the shop floor and to involve workers in the innovation circuit of production processes. Many of the innovations that have been made in this way remain anonymous. Still, they are vital and should not be neglected. Even a small reduction in costs may result in huge profits. An eloquent example is provided by the electronics industry, in which microprocessors are made under the microscope. Battles are fought for microns and nanoseconds. For years, chip technology has been reducing overall dimensions and has been increasing the hosting capacity of circuits. The constant pace of incremental improvement confirms the now famous law of Gordon Moore, according to which the available computing power quadruples every 30 months. (Moore's Law of Productive Technology was enounced two decades ago). Those who design circuits know about the tremendous effects that the conquest of a minuscule space or the reduction by an infinitesimal fraction of operating speed can produce.

Each and every industry, company, or service is involved in a process of perpetual innovation that is reflected in price, quality, aspect, advertising, functioning, and user-friendliness. Innovation also accounts for a continuous effort to build additional layers of competitive advantages. At certain points, this race may show signs of exhaustion and saturation. No matter how massive the investments, profits no longer live up to expectations. In other words, the efficiency of the incremental approach is limited.

The discovery of this phenomenon has led to the examination of another type of innovation, called "value innovation" by certain authors (Kim and Mauborgne, 1990). This approach ultimately means to get out of the competition, to forget product improvement and incremental thinking, in order to choose a different track, one on which there is nobody just yet. Value innovation is innovation that actually introduces a different product, configures another market space, attracts new clients, and opens brand new horizons. In a comparative study of several new companies, it was noticed that companies using value improvement in an attempt to match or to beat their competitors generated considerably lower profits than those based on innovation. "Rather than building advantages over their competitors, companies with huge profitable growth aimed to make competition irrelevant by providing their buyers with a quantum leap in value".

This perspective on innovation, along with the underlying economic strategy, has some qualities that are worth mentioning. First and foremost, the attitude toward competition became a real trap for the theorists of incrementalism. Competitors are no longer the obsession of a company based on value innovation; their adversaries no longer matter. The logic of the zero sum game is no longer valid. Secondly, the impulse no longer comes from outside, from a competing and imitative environment and its random events. It stems from

*"A little neglect may breed mischief: for want of a nail the shoe was lost; for want of a shoe the horse was lost; and for want of a horse the rider was lost" (from Benjamin Franklin, *Maxims Prefixed, to Poor Richard's Almanac* (1757), in Bartlett (1941), p. 227).

internal resources and acknowledges a shift of focus from “exogenous” to “endogenous” growth and innovation. Thirdly, the reduced degree of competition allows some strategic relations with other firms in harmony with the requirements of the early “modular society”, in which network is the prevailing element. Finally, this concept fits nicely with the knowledge economy, since it relies on specific pieces of knowledge and ideas.

This example, taken out of the economic sphere, provides an interesting analogy with the progress of the theory of negotiations and conflict resolution.

The myriad experiences in this field comprise difficult situations, protracted or recurrent, resulting from conflicts between states or economic entities, in which the basic issue is that of distributing a material asset. Distribution may apply to a territory, a strategic geographical position, mineral resources in a certain area, a sum of money, even sharing loot or profit. Such situations were studied by the two-player game theory, especially zero sum games. They resulted in an important number of conclusions, practical observations, and recommendations. Most of these concern the negotiation process, the succession and proportions of the concessions offered, the threats, the bluffs, and the promises. The result points to a formula of mutual accommodation of interests to be incorporated into an agreement or final solution that is meant to bring about the termination of the conflict. Game theory is adequate because it defines a game as a rule-based competition.

Nevertheless, the possible analogy with the game of economic competition – in which the rivals are in dispute over one and the same good, namely the market and the buyers – is most striking. The moves of everyone are incremental and experimental. They are aimed at seizing maximum advantage from a sequence of ingenious steps. It should be noted that competing companies cannot possibly become partners in any of these two cases.

The theory of negotiations and conflict resolution has registered the limits of these methods and even their failure in different types of situations, which do not involve the (re) distribution of a tangible good but rather a confrontation between two cultures in an identity conflict. There is nothing to distribute or to reconcile when it comes to two religions, two languages, two histories, two categories of customs, two mentalities, or a territory jointly inhabited by two populations that illustrate the above-mentioned differences.

Such situations are what gave birth to the “innovative” school. It aimed at achieving a new formula of conciliation, based on common interests. The trick was to make the two parties work together. It was only in the few cases in which the innovative approach was utilized that a successful outcome was obtained, leaving behind the numerous disputes that had poisoned previous relationships. An even more explicit form of that school suggests a philosophy of the common project.

In the area of negotiations, the innovative school displays even greater similarities with value innovation than in the case of the chapters on classical incrementation competition in negotiation games, or of the hardly reducible rivalry between businesses. Indeed, it was this school in its most recent and explicit form that – following a comparative study of the

conflicts in the Balkans and in the Caucasus – made a new start by leaving the old track and even overlooking the conflict itself.

The innovative solution is a project built on the clearly identified common interest of the conflicting parties. The proposed solutions pertain to the idea of civilization. They involve fewer and fewer values and beliefs, and they rely solely on the preservation instinct of the parties concerned and on their aspiration to normality. Of course, dialogue is not ruled out, but it gives way to the concept of interaction. In the final act, the initial problem is no longer even mentioned. It only contains the description of a common project in a non-controversial area and calls for constructive interaction.

All the features of economic innovation are to be noted here as well: the zero sum game is left aside; the source of the solution is endogenous, starting, as it does, from an idea related to the sphere of knowledge and intellect, and the goal is to transform former adversaries into partners. In economic matters and in political negotiations alike, the same word is used for the old competition or conflict; the common project makes it irrelevant.

This analogy points to an even greater degree of generalization so far as problem solving is concerned. Those problems that are by their nature protracted, difficult, or even unsolvable by means of current methods, require a new audacious approach: the substitution of a problem with another problem that makes the former obsolescent and irrelevant. The newly suggested problem has the virtue of opening new horizons and simultaneously meeting the expectations of those who have been caught up in contradictions and dilemmas.

Education accepts the reality of its impasse and the fact that it can only get out of it by adopting a common strategy with an adjacent field, that of work, in its attempt to find an authentic, innovative solution, to leave the never ending track of small-step reforms and piecemeal approach.

We shall see whether or not the innovation in question can be learned in schools, in institutions, or in society. Not only children learn but also adults. Today we use phrases such as: “learning companies”, “learning societies”, and “learning governments”. It is most likely that the attribute will secure the success of these undertakings.

Despite the abundance of courses, schools, and textbooks, it is difficult to believe that the mystery of innovation will vanish and that the cultivation of the capacity to exercise it can be confined to algorithms or universal practical recipes. Epistemological theories or the knowledge of how the brain functions only enable us to see innovation as a special attitude, a product of various, yet unidentified, factors. We might at least agree on the circumstances that could facilitate or encourage it to flourish. It is not clear who will come up with the surprise.

Here is an edifying example. We process knowledge, we use it, systematize it, or enrich it through reasoning. For centuries, we have debated the merits of the Aristotelian deduction or of Baconian logic. Both are vertical, but the former operates from the general to the particular, downwards, from principles to facts, while the latter functions the other way round, from particular cases toward generalization.

4.3. State, Democracy, and Market

An acutely perceived need is felt to clarify the relationships between the state and the market economy in the new century. The need is so much greater as education, work, and knowledge put additional pressures on both the state and the market. No issue is as topical for political discourse as the relationship between politics and the economy and between the State and the market. The former has decision-making and managerial power relative to public good. The power of the latter lies in the welfare offered by the private owner and producer. Political parties are basically classified according to focus and supremacy. Emphasis is laid on importance and priority.

One interpretation suggested that the triumph of the market would lead to the decline and eventual disappearance of states. Instead, at the end of the first decade of transition, analysts concluded that growing poverty in some countries was due to the weakening of the state, while prosperity in others was based on the assumption that wealthy states do not take the news of their imminent demise seriously.

States use the laws to provide a proper infrastructure for the operation of the privately owned economy. The State has institutions designed to apply those laws in order to provide roads and public transportation, trained personnel, improved health, clean cities, and the rational use of resources. It also has to ensure the protection of property and the security of lawful transactions.

The diseases from which states suffer are generally different from those of private businesses. First, there is bureaucracy resulting in rigidity, inadequacy, waste, duplication, high costs, and inefficiency. Second, there is corruption, when public responsibility is misused for personal gain. Third, there is a temptation to paint everything in political colours, bringing along a great deal of ideology and demagogy and pushing aside the criteria of competence, which should be decisive in public service.

Nevertheless, the State is the main employer, sponsor, and leader of education and knowledge. It also has to be the creator and mentor of the legislation regulating work and other civil rights. But the pace of change in the internal structures of states is slow, and their adaptation to global challenges (technology, trade, financial markets, knowledge) is held back by considerable inertial forces and vested interests. The diseases of the state are a perpetual memento of the dangers that education and work have to face.

Tangible indications of emergent counteraction are already visible. The educational system has reacted by promoting decentralization, i.e., the transfer of ministerial duties to regional and local authorities, down to the level of schools. Increased academic autonomy, the enhanced responsibility of schools in terms of financial administration, the growing number of optional courses, and parent and community involvement provide clear evidence of the flexibility that the educational system has been asked to develop.

The inherent shortcomings of the market, especially its absolute acceptance of extremist liberal trends, directly concern education and knowledge. They also have a bearing on employment policy. Such is the case with the short-term goals and limited interests involved

in the calculation of profit. Who would be willing to invest in the expectation that possible competitors would benefit from the results? It is only the State that can make such generous gestures because it has to treat the whole of society as a beneficiary.

The avoidance of a long-term view has unfortunate effects on education and research. Comparative studies of several countries indicate that the tangible results of a robust modernizing reform and of considerable investment are to be reaped within a minimum of twenty years. Advancements in the fundamental sciences, in mathematics, in the structure of matter, and in the system of life are also a matter of long cycles. Statistics indicate an increased interest on the part of the private sector in such activities, as expressed in the increased availability of funding. Still, with almost no exception, such funds are funneled into short-term efficiency projects. The genome project was deemed to advance fundamental science, but it also had extensive applications in the industries that had benefited from the progress of cellular biology. The promise of considerable profits precipitated the interest and funding from the private sector.

In the countries in transition from planned to market economies, the mistaken perception of the role of the State in relation to market resources led simply to the closing of research institutes employing highly trained personnel. In those countries, private universities have mushroomed: they now enroll up to half the total university population in some places. The key word of transition is privatization, so why not apply it to education as well?

The results were mixed. On the one hand, quality went down. Selection for admission was almost non-existent. State education lost teachers but also candidates who no longer wished to face the rigours of entrance examinations. On the other hand, the flexibility of private universities was much higher; so was their openness to innovation. State universities also rose to the challenge by admitting students without requiring an entrance examination and by charging them tuition fees. These fees enabled the universities to increase the wages of professors and to improve study conditions.

The tendency to privatize the educational system in the circumstances of the new economy is a new phenomenon. The premises of this position are undoubtedly viable. The producers of national wealth, the state budget, and the state institutions included, must have a say with respect to the fate of the learning industry that has become the main resource in a knowledge economy. They are also entitled to demand that the necessary knowledge, skills, and attitudes be produced with a view to obtaining more wealth. Now, when human capital has become more important than physical capital, it may at least claim a place in the decision-making *Areopagus*, next to public authority and civil society. Will the logic of the market prevail over the traditional approach, based on the public good? Will education stand to gain in that perspective?

One of the arguments that is frequently heard is that private enterprise is better equipped to train young people for the global economy of the Twenty-First Century, characterized as it is by increased competitiveness.

We must face the reality that the “products” of public schooling do not inculcate the kind of active dedication to competition that companies seem to be seeking. In Japan, the

graduates of regular universities are welcomed into the business community with the following slogan: “Now you [will] start from the beginning; you will enter the real school of the company which will enable you to perform an activity for which you are completely unprepared at this point”. And still, according to Japanese tradition, those young people are likely to remain in the respective company for the rest of their lives.

“The shrinking sphere of action, the limitation of goals, and the increasing specialization are features that do not conform to current aspirations to maintain an open and mobile pool of competent and innovative human resources.”

The disadvantage of corporate universities is characterized by the frequent situation of young people who are trained to fit the profile and behavioural pattern of a given company and who lose their jobs. In conformity with the law of increasing mobility, young people in such a situation must adapt to the requirements of another company, with a different pattern, logic, and fidelity commitment.

It should be noted that the impatience of companies about the perceived insufficiencies of the combative skills provided by regular schools is not entirely justified. The admission tests, the evaluation system, the selection through examination, the involvement of students in competitions with other schools, the struggle for recognition and prestige, the very effort required to graduate, and the fear of dropping out demonstrate that there is competition in the public education system. Aggressive competitiveness is also reinforced through sports.

For an evaluation of the advantages and disadvantages of a possible preference for education provided by private companies, corporate universities and the training they offer are a case in point. The emergence of such centers of learning has made the established educational system more alert and open to innovation. Corporate educational units are privileged places for experimentation and innovation, enjoying significantly superior facilities compared to the public sector. They have already brought in a stimulating and even provocative touch of freshness. Conversely, the emergence of segregated educational enclaves may appear ominous in any learning system in the circumstances of globalization. The shrinking sphere of action, the limitation of goals, and the increasing specialization are features that do not conform to current aspirations to maintain an open and mobile pool of competent and innovative human resources.

It is now the time to examine another dimension, which in the general confusion has been represented as a merit of the triumphant march of the market: democracy. Indeed, market and democracy do have something in common, *i.e.*, the idea of liberty, the recognition of individual responsibility, the encouragement of an entrepreneurial spirit, and risk-taking. These features were even celebrated as inseparable expressions of the victory of liberal democracy by Francis Fukuyama in *The End of History and the Last Man* (1992).

A closer look reveals that market and democracy are quite neatly delimited when it comes to equality. Democracy exalts the equality of citizens before the law as equal owners of a set of universal rights, including the rights to education and to work, and it requires the State to watch over the observance of those rights. Moreover, democracy demands that the State ceaselessly strive to remedy the undesired effects of economic mechanisms (illiteracy, unemployment, discrimination).

The principles that guide the functioning of the market are free of such concerns. It has been recognized (and measured) that the economic processes leading to successful accumulation of wealth are accompanied by deepening inequalities both domestically and at an international level. The route might be the same and the processes may run parallel, but still, democracy and the market are currently heading in opposite directions. Cogent data offered by economists confirm this fact.

In the transition countries, the latter statement is attributed to those suspected of being nostalgic regarding the planned economy. In the developed countries, it may pass for a socializing outburst on the part of the enemies of entrepreneurship. And yet, inter-governmental meetings taking place in resplendent historic cities have to face the anger of fringe groups that describe themselves as “anti-capitalist”. At United Nations summits, the acceptance of globalization as an ineluctable process is accompanied by lamentations regarding the inequalities that it tends to aggravate. It should be noted that most of the protesters are teenagers; so are the persons who are throwing stones in Gaza and Jericho. Even though there is some talk about manipulation, we must not overlook the anxieties caused by delays and hesitations in applying the agreed measures designed to correct some of the more severe inequities or to bring certain critical conflictual situations to an end.

Theoretically speaking, school is a propitious place to understand democracy, to develop it practically, and to assimilate it durably. Facing the teacher, all pupils are equal. Young minds perceive any negative or positive discrimination as intolerable. Any references to ethnic, religious, or linguistic specificities or to those of habit or belief are regarded as deviations from the general norms of education. Of course, such a position presupposes that the system itself is not contaminated or poisoned. Non-discrimination and education for all are key notions in modern conceptions of education, as attested by acts of law, international conventions, and educational theories. Education is probably the climax of equality, which the tougher realities of social and economic life will eventually dilute.

What is the solution? Who are the future patrons of education, science, and knowledge? Classical Antiquity invented the *triumvirate* as a form of government. In some states, the employers, the trade unions, and the government co-operate on matters concerning production and work. It is also plausible that educational processes should develop under the auspices of a triangle consisting of public authorities, private enterprise, and civil society. Each of the three has the material and conceptual resources that can provide education with an organizational formula that would meet the requirements of participation, anticipation, and work quality.

4.4. Democracy and Roles

An honest survey of the Twentieth Century would surely reveal that work was a clear winner. It marked the end of the era of Sisyphean toil, of a brutalizing pace, and of raw physical effort. Suffice it to say that the workweek used to be nearly eighty hours long in the Nineteenth Century

Around 1800, in Germany, people worked for ten to twelve hours a day; in 1820, for eleven to fourteen; and between 1830 and 1860, for fourteen to sixteen hours. The maximum nearly reached 112 hours per week. Reading the ILO statistics on the average numbers of working hours per week (34.7 in the United States, 38.3 in Germany, and 38.9 in France, recently cut to 35), we realize how much modern technology and advanced management have done to improve the human condition.

The remuneration for this more relaxed work shows a continuously rising trend, reminding one of Fourastié's calculations (Fourastié, 1966) for the equivalent of an hour of work in kilograms of bread over two centuries.

A major failure in the field of work, unemployment, has, however, become an obsession for politicians and a constant concern to society.

Let us look at the industrialized countries first. According to OECD standards, unemployment should normally affect about 8.5 percent of the labour force, a total of 35 million people. The situation was not always the same during the postwar period. Until 1970, unemployment did not affect more than 10 million persons in the OECD countries, but soon after it started to grow and eventually tripled in 1982. Despite some amelioration owing to the economic expansion of the 1980s and to massive countervailing measures, the level of unemployment did not fall. Rather, it tended to remain unchanged, defying a plethora of legislative, economic, and social remedies. The persistence of that phenomenon pointed to a weakness in the system and to the under-performance of the economy. Those who seek solace in the fact that an aging population reduces the pressures on the job market in some countries are confronted by the reality of a longer active life and the claim on the part of senior citizens of the right to work.

Several conclusions can be drawn from an analysis of developments in those countries in which unemployment and its social consequences have been extensively covered in specialized research literature.

First of all, what is the meaning of structural unemployment? It has to do with a failure of adjustment between demand and offer on the labour market. Some authors estimate that this type of unemployment is quite important: 8 percent of the labour force against an overall rate of 10 percent. As its name illustrates, structural unemployment is the effect not only of market regulation but also of structural change. One of its underlying causes is that of qualification, which should have been provided through education.

There are quite a few vacant positions calling for high skill levels. Every day one hears of frantic efforts to fill the gap in demand for software programmers. At the same time,

the growing mass of job seekers with low-grade or obsolescent skills is confronted with an obvious saturation of demand. Once again, we have here a telling demonstration of the fact that the mission of education has to be closely linked to the future of work. The knowledge factor pushes the standards required of education ever higher, at a greater speed than the ability of the schools to adapt.

Current programmes for coping with unemployment are primarily directed at a better mobilization of the existing labour supply. They involve additional training for unemployed adults and special measures for young people and for the disabled. A different but complementary strategy involves government assistance to persons who are willing to start a new business on their own or special incentives for companies to employ additional workers. In most of the industrialized countries, expenditures for this type of measure aimed at increasing the chances of productive employment of their citizens have reached some 0.5 percent of GDP.

Another possible solution is *active search*, i.e., employers trying to contact job seekers by all kinds of methods including employment services and an effort to encourage more mobility for a wider variety of jobs.

A special category of measures has been developed purely in the educational sphere. The aim is to develop employment-related knowledge and skills within the educational system through the initiative of employers. This new type of activity is definitely on the rise. Never has the variety of non-classical methods or innovative approaches been so wide. Lifelong education, education for work, modular curricula, adult education, and on-the-job training offer a broad spectrum of solutions. Their diversity is in inverse proportion to their ability to fit a single coherent scheme. Hence the need to develop an articulate system whereby the issues of education and work can find practical answers at a lower cost compared to the previous loss-making, old-fashioned, and outdated systems.

Even though the debate on the natural and legitimate responsibilities of the state in economic matters has been as heated and as controversial as ever, the state still retains powerful levers for reformulating its own functions in order to control, or at least to influence, the developments that may be of concern to society as a whole. Instead of a command panel with as many buttons as a nuclear power plant or a transatlantic jet, the state still relies on a small set of simple pedals, most of them not necessarily governmental, to influence the course of economic development.

Inflation and unemployment are among those phenomena that can be realistically controlled. The pedal that the government of a market-oriented country can push is the one that sets the level of the prime interest rate, which accounts for the essence of its economic policy. Controlling inflation takes priority. It has been the main headache of decision-makers and economists because it affects the living standards of the entire population. Broadly speaking, to check rampant inflation, one has to raise interest rates. Money becomes more expensive; prices go down; and so inflation is tamed. When the pedal is released and the interest rates rise, the cost of money goes up, investments go down, economic growth slows down, fewer new jobs are created, and unemployment soars.

Europe is illustrative of a policy that keeps the interest rates high resulting in heavy unemployment. This trap has lived on, despite a post-recession recovery. For quite a while, Europe has been casting envious glances at the paradoxical situation of the United States, where a combination of a high rate of economic growth, a low inflation rate, and high employment defied the classical equation for almost a decade.

Globalization makes the prospects of stimulating growth through classical methods even gloomier in certain countries. The huge amounts of money that move rapidly around in the networks of globalization make it necessary to adjust monetary policies accordingly, rather than to pump money into the economy. As a defensive reaction, the interest rates will increase, thus inhibiting a rational use of available productive resources. In terms of philosophical approach, the economic policies of many developed nations are still dominated by monetarist neo-liberals, who do not rank increased employment high on their lists of priorities.

The pedals available to government authorities do not function perfectly. Sometimes their expected effects are delayed. Here we are faced with another paradox. At a microeconomic level, considerable profit increases following the introduction of new technologies and subsequent expansion occurs simultaneously entailing significant cutbacks in personnel. This phenomenon is what companies describe as *downsizing*. New trends in management have turned the proportion of efficiency and the volume of human resources upside down. Again, paradoxically, this phenomenon occurs during non-recessionary periods.

While past recessions primarily affected blue-collar workers, in the late 1980s, four out of five people who lost their jobs were white-collar workers, i.e., managers, clerical workers, and salespeople. The figures for the United States are relevant. In the late 1980s and early 1990s, two waves of corporate downsizing swept across the economy eliminating about 2.5 million jobs. In 1995, when corporations cashed in the highest profits in twenty-five years, 600,000 people were laid off. The same phenomenon was replicated in Europe. Also in 1995, a major bank posted a \$1.75 billion profit while eliminating 10,000 jobs.

In defense of these measures, some specialists claimed that most of the personnel who had been made redundant eventually found employment with other companies. True enough; however, as one case shows, only 70 percent of the workers found new jobs, and half of them for lower wages. In many cases, downsizing meant that people had to be content with poorly paid work that earned them far less than what they had earned in their previous employment.

Some American economists praise the flexibility of the American labour market as opposed to the more rigid system prevailing in Europe. The price of that rigidity, caused by generous social programmes supported by the trade unions, could be high unemployment.

Lester Thurow (1999) draws the conclusion that “downsizing has destroyed the old implicit post-Second World War social contract”, whereby people could count on stable or lifetime employment, provided their own performance was satisfactory and that their company made profits. He actually provides a definition of work mobility when describing the effects of downsizing. Firms, he writes, “are developing a contingent workforce composed of involuntary part-time, temporary workers, limited-contract workers, and ...consultants who work for wages far below what they have previously been receiving”.

Another worrying phenomenon in the labour market is the condition of those persons who have been completely and definitively left out.

Marx's *Lumpenproletariat*, whose reduced productivity made them undesirable to any employer, are now known as "the homeless". The sidewalks along the streets of many great cities serve as bedrooms for the terminally unemployed. In order to understand the possible consequences of the emergence of that underclass, let us recall Herbert Marcuse's forecast (in *MacIntyre*, 1970) according to which future revolutions would not be carried out by the proletariat but rather by people who were marginalized and rejected by society: the *lumpenproletarians*. They are said to comprise between 600,000 and 800,000 people in France and nearly 7 million, over a five-year period, in the United States.

The prevailing fatalistic attitude toward the mysterious ways of the economy and financial mechanisms does not exonerate the state from its own responsibilities. Unemployment is a sensitive electoral issue for politicians. Taxpayers, who also happen to be voters, do not easily accept job insecurity or loss. States tend to acknowledge their responsibilities as well as the fact that individuals are powerless when left, on their own, to confront the scourge of unemployment. The response is basically embodied in the quasi-philanthropic and humiliating unemployment benefits, "the dole", which amounted to almost 2 percent of the GDP in the countries with an unemployment rate of 10 percent. One should add to this nearly 0.5 percent of GDP for mobilizing the existing labour supply through training and recycling.

The problem of jobs is acute. Attempts to alleviate it have always led to an aggravation of the budgetary situation, threatening financial disruption and bankruptcy: however, there is a viable economic solution in sight.

At this point, the contrast between the lucid acknowledgement by the State that urgent measures with regard to the education/work relationship are needed and the inability of the State to follow-through on such measures is confusing. A lingering suspicion exists that active measures to combat unemployment simply do not work.

Let us take a look at the official texts of a meeting of labour ministers of the industrialized countries that took place at the end of the 1990s.

Everything that was stated there is true and pertinent. The ministers admitted that globalization stimulated technological advances and worldwide liberalization but that the relationship of globalization to the structure of production and employment was problematic. The link between rising unemployment and the widening income gap was quite correctly emphasized. The ministers also noted that structural changes were difficult for some countries to absorb and that a public backlash against globalization was possible. They were convinced that broad-based strategies and structural reforms were necessary in order to reduce unemployment, parallel to fostering the emergence of a knowledge society "capable of generating high-productivity and high-wage jobs". They mentioned the importance of new incentives to improve training, to enhance the effectiveness of an active labour market, and to bolster employability through coherent strategies for lifelong learning. A strong link between

work and learning groups was recommended, along with a better co-ordination of the labour market, between workers and employers, so as to promote education and training. All the right premises were recognized, from the knowledge and learning society to employability for all, even the need to find the appropriate answers together. But practical solutions were still missing. The bottleneck was identified at the point of transition from school to work. Sheer intuition must have prompted the ministers to state that the young entrants into the labour market “are likely to be required to have a variety of educational and employment experiences, either concurrently or in quick succession”.

Educational experts congratulate themselves on having a five-year mandate (still uncompleted by 2001) to develop lifelong education for all. They regard the latter as an effective tool to reduce the risks of economic and social marginalization. They are concerned with providing learning throughout adulthood and with creating new opportunities to mix work with learning. They acknowledge the need to introduce more flexibility into the educational timetable and to consider new combinations and new pedagogical approaches to meet, more effectively, the learning requirements of adults. Here again we find another bottleneck: the insufficiency of the means to measure and to recognize how better education translates into higher productivity. The peremptory statement according to which “teaching in the classroom is the central instrument of educational policy” is even more disarming. That very premise might have to be abandoned so as to get closer to the right answer.

All the pertinent terms are present in that scheme, even the curriculum, with timid attempts to season it with a few topical subjects. Only modularity is missing, gathering dust in some forgotten drawer. Without it, no matter how good the co-operation among various ingredients may be, the mixture will neither coagulate nor come to life. The solution of lifelong learning through individual curricula that are freely chosen, knowledge intensive, and aim-oriented in a system with multiple entry and exit points, in the double helix of work and learning, is still not visible.

4.5. Knowledge as Self-Fulfillment

We have noted with satisfaction the encounter between the economic sphere and knowledge as an essential factor of production. It is a decisive step for the development of a mutual interest in the future of education and its funding and for the establishment of a creative relationship between work and education. Knowledge will have to moderate its appetite for theorizing and formalizing in favour of applications and utilization. The new method for upgrading the status of work with better qualifications and higher wages is paralleled by enhanced motivation, which energizes the learning processes. Last but not least, it creates a favourable environment in order, simultaneously, to deal with the rigid processes that have been so resistant to change in the spheres of both work and learning. The two can be finally joined together on the same social spiral.

Turning this exclusively utilitarian vision of knowledge into a dominant paradigm or theory may obscure the danger of neglecting the major changes that have altered the world-view of a significant part of the population, especially the young.

First, there is a different type of knowledge than active knowledge, which used to lead the individual along either known or new paths. That knowledge is sometimes called “inert” because it has been stored without counting on an obvious opportunity to use it in new and predictable situations. Active knowledge has a visible and recognized utility, while the inert type has different utility criteria (e.g., aesthetic satisfaction, aspirations to erudition, private answers to philosophical questions, and support for individual mediation). It is hard to believe that such knowledge can be compatible with an employment-oriented vision.

For the time being we shall restrict ourselves to formulating the principle and to examining what its corollaries are from the point of view of society’s obligations towards the child. This principle is that education (the “full development of the human personality”) is not simply a contribution that would be superimposed on top of the results of an individual development regulated in some inborn way, or that is accomplished by the family alone. From birth to the end of adolescence, education is one whole, and is one of two fundamental, necessary factors for intellectual and moral formation, so much so that the school carries a great responsibility regarding the final success or failure of the individual in pursuit of his own potential and adaptation to social living. In a word, the internal evolution of a person (according to the aptitudes of each one) ...provides merely a certain amount of rough outlines that are capable of being developed, or left in an untouched state. But these are only rough outlines, and only social and educational interactions will transform them into efficient behavioral patterns or destroy them totally. The right to education, therefore, is neither more nor less than the right of an individual to develop normally, in accord with all the potential he possesses, and the obligation that society has to transform this potential into useful and effective fulfillment. (Jean Piaget, *To Understand Is To Invent The Future of Education*, 1973).

Second, useful and active knowledge maintains the educational system as a knowledge-manufacturing machine. The individual enters it untrained and comes out at the other end, well prepared to be engulfed in the social machine of work, in which he or she produces goods and wealth assisted by advanced tools. This vision fails to put people first with all their measurable and immeasurable needs. It is, therefore, contrary to a prevailing and almost universal aspiration.

Third, the active knowledge that is needed for employability and sustained productivity is susceptible to being regulated by market demand, thus enhancing the contrast with the less general activity of public education, which trains people for social roles, even though certain roles may be considered unproductive. This difference also becomes visible in the gap between proprietary knowledge (a status to which active, expropriable knowledge aspires) and general, inert knowledge, which is of no interest to entrepreneurs since it fits the notion of knowledge as a public good.

Fourth, active knowledge aims at exclusivity. It is available to a limited and select number of people. The inherent consequence is alienation from the universal and indiscriminate calls for education for all, thus widening the gap between the “haves” and the “have nots”.

Fifth, active knowledge ignores that “inert” stock from which individuals spontaneously and unexpectedly pick up associations and ideas to develop a creative initiative or an innovation. What we call “intuition” has deep roots that cannot be programmed. It plods its way slowly, drawing from the complex experience of life. When it comes to problem-solving competencies – for which it develops solutions, algorithms, and recipes – knowledge leaves out the capacity to invent new problems, the true quality of innovative spirit.

A more radical sociological school starts from the adage that “knowledge is power” in order to reach the conclusion that education has invariably produced trained individuals according to the pattern imposed by superior authority. It claims that the economic paradigm of knowledge is nothing but a rehashed form of the old stratagem: economic power shapes individuals for its own purposes. An influential contemporary trend, while denouncing technology and science as allies of the dehumanizing and homogenizing structures of power, goes so far as to recommend that people smash the windows of productivity and paid work-oriented knowledge.

A less militant perspective is offered by the examination of the differences between objective knowledge and subjective values. A theorem or a technological procedure, a work of art or a personal opinion, belong to two different families. One is that of civilization, which includes all activities and goods having a universal vocation. There are no different ways of building aircraft, laying out roads, organizing hospitals, or making banks operational. Everything is there in the universal research network. Any statement produced by that network is provable and reproducible anywhere in the world. However, the same does not apply to values, which belong to various and numerous cultures. Cultures (always in the plural) comprise traditions, history, languages, and untranslatable beliefs. They lie at the other side of the spectrum considered by Arnold Toynbee. When we talk about globalization, we make references to civilization, i.e., to technology, science, economy, and infrastructures. At this level, the unprecedented flourishing of cultural variety parallels globalization. Cultures thrive through specificity and originality, unlike civilization that creates similar roles and professions all over the world.

Still, the quest for identity holds its ground in our modern world. It is linked to the aspiration for dignity, and it ranks high in the book of universal human rights and values, which go beyond all cultures. In economic literature, with the employment-wages-qualification triad at its core, there is no reference to dignity. Yet dignity plays a fundamental role in both work and learning processes. Work creates humankind and builds up his or her personality. A human being is what he or she produces.

In addition to self-identity pertaining to dignity and self-respect, there are two other elements that have been neglected by the economy-oriented approach. One is the quest for meaning, which does appear in the process of knowledge in the absence of value, and therefore culture. It adds to our linguistic symbols and conceptual elaborations through the use and assiduous frequentation of contexts, beyond the factual or formal enunciation. There is relevance in the story about the man working for a railway company who, after thirty years of successful activity, had only one wish: to be told why on earth he had to hit the train

wheels with a hammer at the station. Know-how never exhausts the meaning of work, always searching for whys. That question is also essential to learning.

“Schools of thought contesting the value of reason flourished, without noticing that the disputed areas and the banners of victory were nothing but extensions of the same reason too narrowly and arrogantly defined.”

The second element is ludic, also common to learning and work. *Homo ludens* enjoys playing games – competitions with rules. When one says that a young person finds satisfaction in learning and an older person is happy with his or her work, the sensation evoked is primarily a ludic one.

There are very many reasons to think of civilization and of cultures together, in “opposite inseparable terms”. Recent writings admit that mankind is passing from an or/or logic to an and/and logic. Learning and work are the most evident areas in which civilization and cultures intermingle.

The impact of this shift on the curriculum is considerable. Also, it increases the difficulty in reflecting the essential from a vast variety of cultures. With a mandatory and fixed curriculum, many pitched controversies are expected to emerge. The competition between the universal and the local, illustrated by Alan Bloom’s book, *The Closing of the American Mind* (1987) has been enlivening American society for many years. As to the individual curriculum, the problem becomes much simpler. We only have to ask ourselves what modules are recommended for individual choice in the process of lifelong learning.

There is also an overriding civic culture, which allows individuals to assimilate and to apply, meaningfully, all the concepts and practices of social life. It is regulated by the laws and mechanisms of the social contract it has itself generated. Democracy falls under this chapter. So do human rights, in close conjunction with duties and responsibilities. The mechanisms of governance, the policies of political parties and the games they play, the limits and the value of power, the conduct of elections and the exercise of suffrage, the relationships between state and nation, between the governmental and the non-governmental, between public and private goods – are all topics for modules designed to examine the same thing from different angles. Political theory should not be mistakenly taken for a theme of learning. Modules titled, “A Day in Parliament”, or “A Cabinet Meeting”, or “Debating the Budget”, or “Attending a Trial” could be ways of conducting actual or virtual experiments, with a greater impact than any theory-based lectures. An efficient method is that of young people simulating a political debate. A module could consist in debating a conflict at the United Nations. Many schools already use such work sessions with roles assigned to pupils.

Community culture aims at targets that are different from social cohesion. It deals with traditions, history, and beliefs specific to a single community, with the cultural binder of

various groups expressing their specificity and their own identity. It points to multicultural society and to respect cultural diversity. This is an extremely topical issue at a time when the cult of specific identity has been heated to incandescence resulting in conflicts that dot the world map. The acceptance of alterity is a salutary virtue that can be sown at the very heart of community culture.

Integrating philosophical culture appears to be a difficult task, and its language sometimes makes it inassimilable. However, if presented in friendly modules focusing on predominant trends – to which we unconsciously stick, much like Monsieur Jourdain's prose in the play by Molière – philosophical culture might offer the young person or the adult the satisfaction of organizing his or her own ideas in a coherent format. The post-Second World War generation experienced, one after the other, existentialism, structuralism, Neo-Kantianism, Heideggerianism, and postmodernism, with its illusion of the *demier cri*. It also visited cybernetic theory, systems theory, and the theory of chaos. Schools of thought contesting the value of reason flourished, without noticing that the disputed areas and the banners of victory were nothing but extensions of the same reason too narrowly and arrogantly defined. These schools have affected everybody in varying degrees, the same as old disputes can be identified in collective mentalities (see, for instance, the debate between the triumphant hedonism in today's consumer society and the vanishing stoicism).

An author classified the three phases of modernity as follows: (i) industry; (ii) globalization, and (iii) revival (expected in the new century). According to him, knowledge is uniform in the industrial age, segmented in the phase of globalization, and customized in the new era. The modular itinerary strives for this sequence. However, in order to create his or her own vision of the world, the individual needs the critical exercise of examining ideas.

Moral culture has many sources. Nobody can decide whether the guide for one's conduct and the dramatic distinction between good and evil is based on religion or on secular beliefs. Kant assimilated conscience to a divine imperative. There are still people who consider conscience as categorical and ultimate. Modern society reflects a deficit regarding this point. The amorality of science is questioned. Prevalent immorality is denounced. Old ethical codes are completed and enriched (*e.g.*, the work ethic); new ethics are suggested (the ecological ethic).

With respect to this last point, a new culture has asserted itself by introducing the values of respect and love for nature, care for resource conservation, preservation of the diversity of the species, and environmental concern. The strategies inspired by this culture, which has the support of young people, establish the responsibility of those living today for the future of the following generations.

Last but not least, we have to mention the culture of literary fiction and the creative or performing arts, described as aesthetic culture responding to eternal and profound human needs. It is a fundamental dimension, always present in the picture of the complete personality produced by individual learning and work in all their aspects. Many of the propensities of modern humanity find their driving force here. Science fiction cherishes the anticipatory spirit, and literary fiction guides us through the realm of the imaginary so that we may return to our own reality in a more relaxed state of mind.

The topics of culture lend themselves more than any other subjects to the free choice of the individual. He or she can cover a multitude of optional modules, which do not lead to definitive statements, but to possible and plausible ones, thus encouraging a permanently critical attitude.

Why is knowledge, in the positive and universal form of science and technology, so much contested by the advocates of cultural values and beliefs? Why are those cultural elements viewed with suspicion and often ignored by the proponents of positive knowledge? Because of what distortion or sophism engendered by a schizophrenic and separatist dualism can they not be accepted together as inseparable components of learning and work? Their common spiral invites a further effort to restore the wholeness of the mind and to reconcile the two hemispheres of the brain, which are naturally destined to work together.

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Contours of New Economic Theory

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Abstract

The need for a paradigm change in economic thought has been well established, but the contours and fundamental characteristics of a new paradigm in economic theory are yet to be worked out. This article views this transition as an inevitable expression of the maturation of the social sciences into an integrated trans-disciplinary science of society founded on common underlying principles, premises and processes. It calls for evolution of human-centered, value-based economic theory whose objective is to maximize human economic security, welfare and well-being rather than economic growth. It emphasizes the determinative role of fundamental creative social processes expressing in all fields of human endeavor. It argues for extending the boundaries of economics to encompass the entire gamut of political, legal, social, psychological, intellectual, organizational and ecological factors that directly and indirectly contribute to economic security, welfare and well-being. The article concludes with a list of anticipated practical implications.

1. Need & Scope of New Economic Theory

The objective of the XII International Colloquium in Gainesville, Florida, USA is to explore alternative visions of sustainable development and alternative economic theories that more effectively translate economic activity into sustainable models of economic security and equitable development for humanity as a whole. The seemingly modest objective implies the need for radical change in economic thought and policy. It acknowledges the fact that current theory and policy are inconsistent with the goal of sustainable development for all human beings. Current theory is focused on the narrow objective of economic growth rather than the broader inclusive objective of meeting human needs and aspirations for survival, security and development. Current theory is preoccupied with enhancing economic performance in the here and now with little consideration for its impact and implications for the future. Fulfillment of this apparently modest objective would have momentous consequences for humanity.

A century ago the science of Physics passed through a critical evolutionary transition which established the foundation for remarkable theoretical achievements and practical applications during the 20th century. A "New Physics" emerged which placed all the partial discoveries of the past in a new and wider perspective. Relativity Theory framed the outer boundaries of the infinite macrocosm within which the fixed laws of Newtonian Physics operate and beyond which their truths are no longer valid. Quantum Mechanics zoomed

into the infinitesimal microcosm, uncovering the inner world of uncertainty, complexity and interactivity which underlies the apparent stability and predictability of everyday material reality, decomposing particles into wave-fields of energy and confirming the linkage between objective and subjective dimensions of reality. Though still far from mature and complete, the reframing of Physics has already led to new processes and technologies of immense power and practical importance to humanity.

“Mainstream Economics remains caught in a polemic, dialectic debate between opposing schools of thought which cling to outmoded conceptions and insist on confining inquiry within narrow conventional boundaries.”

Today there are multiple indications that the science of Economics is approaching a similar critical transition point. Though far less mature than the science of Physics was a hundred years ago, the failure of current theory to effectively address the pressing economic problems confronting humanity today compels us to challenge the conventional assumptions and boundaries of Economics and press for wider and deeper formulations with greater effective power to serve humanity in the 21st century. Economics has failed to generate effective policies for the eradication of poverty, generation of full employment, economic security or ecological sustainability.

Equally compelling is its failure to provide a viable path for fulfillment of humanity's unrealized aspirations, leaving an entire generation of youth frustrated, discouraged and confused. Mainstream Economics remains caught in a polemic, dialectic debate between opposing schools of thought which cling to outmoded conceptions and insist on confining inquiry within narrow conventional boundaries, which are themselves a primary source of their insufficiency.

The consequences and side effects of these failures have practical repercussions that are retarding and undermining the nascent emergence of global peaceful co-existence, the functioning of democracy, the political integrity of states, the stability of societies, the psychological security of people everywhere, and the preservation of the physical environment. The geocentric model of the universe served fairly well as the basis for constructing calendars and explaining the motion of sun, moon and planets, but it was a totally inadequate basis for a wider and deeper understanding of our place in the universe and for recent technological achievements in telecommunications and space travel. However useful these concepts have been for specific purposes and limited applications, the simple truth is the economic theories and models do not match or even approximate economic and social reality and human needs in the 21st century.

This harsh assessment is not intended as a wholesale rejection of existing economic thought, any more than the discoveries of Relativity and Quantum mechanics constituted a

refutation of classical Physics. Rather, the purpose is to establish the need for new thinking outside the boundaries of prevailing economic theory and to point to some essential elements and likely lines of its future development.

“Every electron and every atom of iron or gold possesses the same characteristics and patterns of behavior, but every human being, social activity and structure is powerfully influenced by a plethora of factors that defy generalized assumptions.”

2. Natural and Social Sciences

Nor is the intention to single out Economics for criticism. The need for new thinking more generally applies to all fields of social science. This should not be surprising. The natural sciences have at least a 200 year headstart over the social sciences in formulation of a cohesive and integrated view of the fields they study. Inter-disciplinarity has become an inherent characteristic of the natural sciences since each is based on the same fundamental laws and principles. The same laws of Physics and Chemistry are incorporated and applied in widely diverse fields such as biology, physiology, meteorology, oceanography and ecology. Whereas each of the social sciences operates in a hermetic space based on its own principles and assumptions about the nature of humanity and society.

Moreover, the complexity of material phenomena pales into insignificance before the greater complexity of human phenomena. Physics and Chemistry are concerned only with the interplay of material structures, forces and processes; whereas the human sciences must take into account the intricate interrelationships and interactions between physical, biological, subconscious and conscious mental, political, economic, technological, social and cultural factors. As anthropologist Margaret Mead emphasized, the universality of human nature is subject to wide cultural variations and the typology of human psychological characteristics constantly confronts unanticipated expressions of individuality and uniqueness unknown in lower orders of life and material nature. Every electron and every atom of iron or gold possesses the same characteristics and patterns of behavior, but every human being, social activity and structure is powerfully influenced by a plethora of factors that defy generalized assumptions. For this reason the attempt to reduce the social sciences to the mathematical precision of material sciences has led social scientists to overlook the rich variety of human phenomena and seek to compress them into the straightjacket of mechanistic, materialistic particles and processes.

3. Shifting Boundaries of Economy

The increasing speed of social evolution has added significantly to the challenge confronting all fields of social science in myriad ways. First is the changing nature of economic

activity itself. Modern economic thought was born at the beginning of the Industrial Revolution. It was strongly influenced by the notion that industrial production consisting of units of products produced for a measurable cost and sold at a specific point in time constitutes the mainspring of economic activity. As Orio Giarini has long argued, with the rise of the modern service economy – which now constitutes the largest portion of economic activity – these fundamental assumptions are less and less valid.¹ He pointed out that the service economy is not an outgrowth of the industrial economy but rather a system which permeates that structure, making it predominately depend on the performance of service functions both within and outside the production process. These service functions are far more dependent on quality of human and social capital and other intangible resources than those of the industrial economy.

A change in the concept of economic time is one of the important implications of the shift from manufacturing to services. In the service economy, many economic events no longer lend themselves to point-in-time analysis. Major fields of the service sector – financial services, education, healthcare, telecommunications, transport – consist of huge national and international systems with high fixed costs delivering services over a prolonged period of *utilization time* that begins in the distant past with fundamental research long before commencement of service delivery and extends far into the future before disposal, remediation and full assessment of risks and liabilities can be reliably determined. The emphasis of the industrial economy on physical processing of finite measurable objects at particular points in time is progressively being replaced by an emphasis on managing risks and uncertainty over an indefinable time-span.²

Monetarization represents another invisible boundary line which has restricted the scope of mainstream economics and limited its capacity to directly address issues of human security and welfare. Economics emerged at a time when society was far less integrated than it is today. Agriculture remained the principal economic activity until late in the 19th century and a large portion of it was production for self-consumption rather than trade. By one estimate only about fifteen percent of productive activity was monetarized at the time when *Wealth of Nations* was published. Modelled after the quantitative physical sciences, economic thought focused only on the monetarized sector, which lent itself to measurement. Neither then nor now does the monetarized sector adequately reflect the whole impact of human activity on economic welfare. Rather, its failure to take into account deducted costs, including the non-monetarized resources consumed in the process of generated monetarized wealth, makes it a grossly inadequate and deceptively misleading basis for promoting real welfare and well-being.³ For example, rising levels of water pollution has spawned a \$60-80 billion bottled water industry, an increase in monetarized activity that partly reflects declining human welfare due to pollution, rather than higher standards of living.

The focus of economic study must encompass all activities that impact on the primary objective, including those in the non-monetarized household sector. Indeed, the two sectors are in constant interaction and there is a continuous shift of values between them. Rising levels of participation by women in the workforce increase the monetarized sector two-fold, by converting the housewife into a paid worker and by transforming some housework from

unpaid family labor into paid services provided by others. The total amount of work done may remain the same and quality of life may actually be diminished, but the shift to monetarization records a positive gain.

“The objective of New Economic Theory (NET) is to formulate the theoretical and practical knowledge required to maximize economic security, human welfare and individual well-being of all humanity in a manner consistent with universal human rights, cultural diversity and civilizational values.”

Rapid globalization has introduced another factor compelling a fundamental rethink of Economics. It has shifted the boundaries of economic thought and policy from the nation to the globe. The notion of national economies governed by national level public policies and relating to the rest of the world through semi-porous membranes is less and less relevant to an increasingly interconnected world in which trans-national corporations, global markets, and the growing realization that all human beings on the planet must live together, share resources and accept collective responsibility for managing the global commons.

4. Value-based Science

The natural and social sciences differ in another very significant way. The quest of natural science is to discover the immutable natural laws governing the world around us. The role of the natural scientist is as an impartial, objective observer. Whereas the notion of immutable Newtonian laws of nature has no place in the social sciences, which study the world and behavior of conscious human beings, whose habits and propensities are at least partially subject to conscious choice, which can change over time, can undergo voluntary modification and conscious evolution.

All scientific inquiry begins with a study of phenomena as they exist to understand their characteristics, structures and the processes by which they function. Science then proceeds to examine and experiment with ways of utilizing this knowledge to harness or alter these characteristics and processes for the benefit of humanity. However, in the natural sciences, the ultimate standard for evaluating knowledge is the extent to which it conforms to reality, regardless of whether that knowledge has any practical applications or benefits to humanity. Whereas in the social sciences, the primary role of the social scientist is to discover the means to alter those principles and processes or create new ones that more effectively fulfill human needs and aspirations.

Philosopher of science Karl Popper acknowledged that social science can learn scientific method from the natural sciences but cautioned against *misguided naturalism*. He argued that practical success, not just theoretical understanding, must be primary in the social sciences. He emphasized the ethical dimension of social sciences – called for moral responsibility for

outcomes. It is noteworthy that Adam Smith regarded himself as a moral philosopher, not an economist. Smith was looking for ways to enhance human welfare, not seeking to formulate universal laws of economy true for all nations, all times for all people.

Knowledge in the social sciences must be judged principally in terms of its efficacy in fostering human welfare and well-being. The objective of New Economic Theory (NET) is to formulate the theoretical and practical knowledge required to maximize economic security, human welfare and individual well-being of all humanity in a manner consistent with universal human rights, cultural diversity and civilizational values. Economic security ensures the minimum material needs. Human welfare encompasses a wider range of material and social needs related to safety, health, education, and social security. Individual well-being encompasses higher level social, cultural, psychological and spiritual aspirations for freedom of choice, respect, free association, enjoyment, creative self-expression, individual development and self-realization. The objective of economics is not production for its own sake or economic growth for growth's sake. The goal is not to discover immutable, universal, natural laws of economy based on any existing precedent, model or theory, but to identify the laws and first principles of a social system suitable to achieve the primary objective stated above.

Values are not merely utopian ideals or ethical principles. They are the highest abstract mental formulations of governing life principles with immense power for practical accomplishment. They represent the quintessence of humanity's acquired wisdom regarding the fundamental basis for human survival, growth, development and evolution.

At the beginning of the 20th century, Julius Rosenwald joined a small Midwestern Chicago mail order house. One of his first acts was to replace the prevalent commercial doctrine of "Buyer Beware" with a radically new corporate policy "Satisfaction guaranteed or your money back". Within 20 years, the value of unconditional customer satisfaction propelled the growth of Sears Roebuck to the position of the largest retailer in the entire world. A century later this value has become the global standard for successful business. Values are ideals which possess the power of practical wisdom.

A new economics will need to re-examine and redefine many of the fundamental values on which the discipline is based. Central importance will necessarily be accorded to those factors which contribute to enhancing the welfare and well-being of human beings. The values on which NET is based should be universally recognized human values, including

1. Respect for Humanity – the inestimable value and unlimited developmental potential of the human being. Human welfare is the central objective. Human capital is the most precious and indispensable resource for achieving it.
2. Economic rights – the inherent right of every human being to economic security, welfare and well-being.
3. Inclusiveness – economic security and welfare for all human beings

4. Sustainability – protection of the environment and ensuring the equal rights of future generations.
5. Freedom of choice – maximum individual freedom for initiative and choice compatible with the welfare of the entire collective.
6. Equity & Fairness – equal protection of rights and equal opportunity for all
7. Peace and social stability – an economy that promotes peace, stability and social harmony
8. Rights of the human collective – the resources of earth belong to humanity as a whole and should be utilized for the benefit of all.

“The greater the specialization, the greater the tendency to lose sight of the interconnections between different types of phenomena outside the narrow field of specialization.”

5. Hermetic Knowledge

Fragmentation of the social science disciplines is another compelling justification for a reframing of economic thought. The human quest for knowledge naturally proceeds from the observation of the specific and gradually broadens into the study of increasing concentric circles of generality. Mind exercises its power of concentration to examine the particular and then correlate in thought its relationship with other objects and events. Thus, the evolution of the natural sciences began with the observation of isolated phenomena – the motion of planets, properties of gases, circulation of blood – and gradually extended to the quest for more general laws of nature applicable to all phenomena of a particular type – physical, chemical, astronomic, biological, etc. The very success of this endeavor led to a proliferation of separate disciplines and an increasing tendency toward specialization. The greater the specialization, the greater the tendency to lose sight of the interconnections between different types of phenomena outside the narrow field of specialization. Thus, Political Economy evolved into many specialized branches of Economics tenuously bound together and increasingly divorced from one another and the wider political, social, cultural, psychological and ecological context within which all economic activity takes place. *While Reality is one and indivisible, scientific knowledge became increasingly divided, multiple and fragmentary.*

Sporadic efforts to overcome the barriers of hermetically divided disciplines led to many commendable efforts to promote interdisciplinary and cross-disciplinary studies. But a combination and intermixture of disciplinary perspectives are insufficient. Human beings and society do not lend themselves to be manufactured like the subassemblies of an automobile which are then combined together to form a finished working product. The human being cannot be subdivided into a political man, economic man and social man. Each human being

is an integral whole in which all these dimensions are inseparable and interdependent, like the circulatory, respiratory, digestive, nervous and muscular systems of the human body. Society cannot be validly segmented into airtight political, economic and social compartments. Nor can it be reduced to a set of separate but interacting subsystems.

In the field of economics, the intellectual gulf created by disciplinary fragmentation has resulted in a practical gulf between institutions – the division and divorce of financial markets from the real economy, the divorce of employment from production, the divorce of economy from ecology, and the divorce of economy from governance, social welfare, and social stability. NET must necessarily widen the boundaries of economic theory to encompass governance, social welfare, culture and environment.

US President Franklin D. Roosevelt fully understood this when he addressed the American people just after he assumed office at the height of the banking crisis in March 1933. The failure of 6000 banks was not simply an economic problem and could not be addressed by a purely economic remedy. An infusion of funds to bolster failing institutions would not be sufficient. Radical political and legal action was necessary to alter the entire framework within which banking took place. Moreover, he had to restore the social confidence of Americans in their economic capacity and the psychological confidence of individuals in the trustworthiness of their financial institutions. FDR fully understood the inseparability of objective and subjective dimensions of reality, which quantum physicists were just beginning to puzzle over.

Society is an integral whole and can only be fully and effectively grasped by a knowledge which is integral. Thus, the primary objective of new economic theory must necessarily be inclusive of all human activities that impact on economic welfare, rather than arbitrarily confining its scope to the narrow field of direct economic activities. Equally, it needs to abandon the insistence of materialistic science on regarding human phenomena in mechanistic terms that deny or disregard the central place of subjective human perceptions, aspirations, values, attitudes and beliefs. The illusory barrier between the objective and subjective dimensions of human social reality has to be breached and give way to an integral conception.

The greatest scientific discoveries have been those which led to the unification of apparently disparate, unconnected phenomena within a wider, integrated framework. Newton's laws unified motion and inertia. Maxwell's electromagnetism unified magnetism and electricity. Einstein unified space and time, gravity and acceleration. The continuous battle between the contradictory positions of market fundamentalism and public regulation is currently viewed as contradictory, mutually exclusive perspectives. In reality individual freedom and social justice are complementary values that can be truly fulfilled only when they are reconciled at a deeper level. Human accomplishment is a harmonious product of synthesis between individual and collective effort. Individuals create, innovate and act most effectively in freedom, but the greatest and best results have always been achieved only when they interrelate, cooperate, work together and organize harmoniously for the mutual betterment of all. Organization necessitates effective rules and regulation.

The apparent conflict between freedom and regulation can be reconciled by a knowledge of the fundamental process of human energy conversion that governs all human accomplishment. All individual and social achievement involves the release of human energies, the focusing and direction of those energies into force, the channeling of that force through organizational structures and systems to generate effective power, and the conversion and expression of that power as individually and socially beneficial results.⁴

“One premise of the work of The World Academy of Art and Science is that the evolution of new economic theory can contribute largely to the evolution of a trans-disciplinary science of society.”

Effective social theory cannot be achieved merely by fostering inter-disciplinary and cross-disciplinary perspectives and study groups. It is necessary for all social sciences to join together in search of knowledge of the underlying and unifying trans-disciplinary principles and processes governing human interactions and society as a whole. One premise of the work of The World Academy of Art & Science is that the evolution of new economic theory can contribute largely to the evolution of a trans-disciplinary science of society.⁵

6. Contours of New Economic Theory

Until now the development of science has been a long, slow process proceeding by tiny incremental steps interspersed with sudden, radical, evolutionary leaps. The implications of the shift from geocentric to heliocentric theory, which fundamentally altered our view of the entire universe, are still being worked out four centuries after Copernicus' heretical conception. It took a full century after the publication of Darwin's *The Origin of Species* for Watson and Crick to discover the actual genetic mechanism for physical inheritance. Even today the full potential of the nascent science of genetics is only beginning to be realized. Nearly a century after the initial formulations of Quantum Theory by Planck, Einstein and Bohr, the fundamental nature of matter is still fraught with mystery. But in all three cases, the science that has emerged from these radical transitions is almost unrecognizably different from that which preceded it. Expanding the boundaries of knowledge not only increases but fundamentally alters our perception of what is already known.

It may be many decades before a newly formulated economic theory reaches even a moderate stage of maturity achieved by various branches of the natural sciences, but it is reasonable to assume that the new science of Economics which ultimately emerges will differ as radically from what we know today as the uncertainty principle, quantum entanglement, wave function collapse, quantum field theory and complementarity differ from the classical 18th century conceptions. Long before that stage is reached, we can reasonably expect NET to make concrete contributions of immense practical significance to the practice of Economics by enhancing our knowledge of both the fundamental processes by which wealth creation

is generated in the microcosm of individual and social behavior and in the macrocosm of global society. It is much too soon to predict what this future science will become. This paper attempts merely to suggest some of the most likely changes in the basic concepts and boundary lines that define the yet to emerge discipline of NET.

6.1. Objectives

Contemporary Economics is replete with implicit assumptions that are commonly mistaken for established facts. NET should commence by making explicit the discussion and debate regarding the fundamental premises on which it is based. The most fundamental premise must be an explicit statement regarding the objectives of economic science.

The primary objective of economic activity must be enhanced economic security, welfare and well-being of the entire global community, present and future, rather than production or growth for their own sake, whose net contribution to human welfare can and often is negative.

Human welfare directly encompasses a wider range of material and social needs related to safety, health, education, social security and indirectly encompasses political stability, democratic rights, social justice and development of individual and social capabilities. The soundness of economic theory and policy must be evaluated in terms of its contribution to attainment of these wider social objectives. Persistent poverty, youth unemployment and rising inequality are incompatible with human security, welfare and well-being for all.

Individual well-being encompasses higher level social, cultural, psychological and spiritual aspirations for freedom of choice, respect, free association, acquisition of knowledge, enjoyment, creative self-expression, individual development and self-realization. An economic system that promotes rising levels of personal insecurity, lack of opportunities, employment and increasing concentration of wealth and social power is incompatible with this objective.

6.2. Premises

NET should make explicit the wider social context within which economic activity takes place and the fundamental social concepts and processes applicable to all human activities. The partial list of premises given below includes factors that fall outside the traditional boundaries of formulated economic theory, although virtually all are implicitly recognized as determinates of economic performance. Each of these premises points to a factor that actually impacts on the nature and results of human activity in the real world. Each possesses immense potential power for enhancing or diminishing economic performance.

- Like Newtonian Physics, contemporary Economics is centered around and largely confined to the middle ground between the human microcosm and macrocosm. As in the case of Physics, we are likely to discover in future that the regions which lie beyond the boundaries of current theory contain untold power for enhancing economic performance, as our study of atoms and stars has revealed untold sources of material energy. 'Newtonian Economics' is characterized by a quest for precision and certainty for control, whereas NET will shift the emphasis to risk assessment, management of

uncertainty and unleashing of dynamic social processes in an effort to maximize human security and accelerate creative social transformations.

- Economic activity and wealth creation are specific expressions of a more general human capacity for conscious, purposeful behavior of individual human beings within a wider organized social collective.
- The principles of initiative, innovation, creativity, development and evolution occurring in the field of economic activity are expressions of fundamental human capacities for accomplishment, growth, development and evolution.
- The energy that fuels economic activity is one expression of the fundamental human energy that is the driving force for all human development. All human accomplishment involves the conversion of human energy into results by a common process.⁶
- Economy is a subset of society. Therefore the optimum performance of the economy depends on the fullest development and optimal operation of all other sectors and aspects of society, e.g. education, healthcare, law, governance, etc.
- Each individual is an infinitely complex and qualitatively unique microcosm with the potential to beneficially relate and support the entire society. The eminent philosopher of science Karl Popper stressed the centrality of the individual in the social sciences which has been largely ignored by scientific formulations of economics (and most other social sciences today). While history is replete with tales of remarkable individual accomplishment, social science has not yet fully recognized and come to terms with the central and transformative role of the individual as the catalyst for all social advancement. In practice, economics deals with the potential of individuals primarily by advocating a policy that encourages entrepreneurship. But this represents only a fringe of the potential for stimulating wealth generation. In practice we frequently observe the remarkable power of a single individual to change the world economically by generating enormous wealth, founding new industries, creating new products and services, developing the social network and delivery system, and other tangible economic benefits for society at large. Thomas Edison, J. P. Morgan, Henry Ford, Julius Rosenwald, Alfred Sloan, Fred Smith, Bill Marriott, Steve Jobs, Larry Page, and Mark Zuckerberg are just a few of a countless number of outstanding individuals at different levels and in different places whose momentous contributions are practically ignored by contemporary economic science. NET must restore individuality to a central place in theory and practice.

On October 31, 1907 J. P. Morgan gathered a group of bankers in a locked room demanding they pool another \$25 million to finance commitments to prevent massive payment defaults and panic selling on the New York Stock Exchange. The money arrived just in the nick of time to finance transactions during the last hour of the day's trading. Without any official authority, Morgan leveraged his reputation for integrity and the personal trust his colleagues had in him to save NYSE, saving financial institutions and the entire US banking system from collapse.⁷

- Society is an infinitely vast and complex macrocosm which attains its greatest creative energy for accomplishment by nurturing and supporting the fullest development and self-expression of every one of its individual members.
- Society is a complex social organization capable of directing and converting that energy into effective power to maximize human welfare and well-being. The objectives of NET can best be met by a social organization that enables each individual human being to fully develop and express his individual capacities and endowments in a social system that promotes maximum synergy, cooperation and harmony between individuals, communities, nations and humanity as a whole.⁸
- The fundamental unit of economic activity, like that of all purposeful human endeavor, is the individual act which is linked together with other acts to form chains of activity, coordinated and standardized to constitute systems, organized into specialized functions and layers of authority, which are linked together into formal organizations and informal networks, all of which function within wider fields of economic, political, social and cultural activities and institutions.
- Each individual act in itself is a complex microcosm composed of and influenced by conscious intentions, aspirations, motivational energy, values, ideas, knowledge, opinions, attitudes, interests, impulses, sensations and habits that influence every human action.
- The characteristics and capabilities of any economic system depend on the development of these other spheres and the relationship of economy to other forms of social activity. The following linkages are of particular importance to the functioning of economy: peace and security from external threats and interference; a representative system of governance that maximizes the welfare of the entire social collective rather than restricting privileges and powers to an élite or moneyed class; a legal system that maximizes freedom to individuals while balancing it with equity and fairness to all others; an educational system that supports fullest development of the knowledge, skills and capacities of all its citizens; an accessible, affordable healthcare system that promotes the physical and mental health of all citizens; a social system that encourages fullest development and self-expression of the individual and accords freedom, recognition and rewards for outstanding achievement; and a cultural milieu that promotes values of independent thinking, enterprise, innovation, risk-taking, cooperation, responsibility, integrity and selflessness in relations between its members.

7. Resources

Resources are factors which human beings recognize as having the potential to contribute to value and wealth creation. Human mental awareness of that potential is the essential determinate of a resource. Changes in that awareness alter the productive potential of a resource. This implies that something becomes a resource only when and in the measure the human mind recognizes it as such and that development of the mind's scientific and creative capacities has the potential to continuously enhance the productive potential of those things it comes to regard as resources.

NET should be based on a wider conception of resources that includes not only natural capital (land, minerals, forests), financial capital, and man-made capital (cities, factories, infrastructure), but also human and social forms of capital (human energy, attitudes, organizations, institutions, networks, systems, customs), mental or intellectual capital (knowledge, skill and technology), cultural capital (values and customs) and psychological capital (creative aptitude and capacities of individual members).

This wider conception has implications that need to be explicitly examined:

- Sustainable development can best be achieved by the progressive shift in dependence from physical resources to social and human forms of capital.
- Physical resources may be subject to inherent limits, but there is no inherent limit to the capacity of society to enhance the productivity with which those resources are utilized by the fuller development of human and social capital, knowledge, technology, social organization and skill.
- Society is a resource of unlimited productive potential derived from the interactions, exchange, association and cooperation among its members through informal and organized activities, rules, laws, procedures, systems and institutions. Anything that facilitates or increases the ease and frequency of relationship between people has the potential to enhance overall social productivity.
- There are no inherent limits to the mental and psychological capacity for development, knowledge, creativity and innovation of the individual or the collective.

Agriculture was invented about 8000 BC when the human mind recognized that the effects achieved by Nature could be reproduced by systematic planting of crops on empty land. As a result arable land came to be regarded as a precious vital natural resource. Ten millennia later it was realized that the empty space on a webpage located in cyberspace had vast productive potential as a place for advertising. When Sergey Brin and Larry Page launched an innovative new service for small advertisers called Adwords in 2000 by linking user search terms with related advertiser offerings, they revolutionized advertising and began the development of Google into a \$69 billion corporation in 2014, of which \$59 billion was derived from advertising revenue.

The view put forth in this paper is that the validity of social science must be judged in terms of its impact on human beings. It must be human-centered in its objectives and values. But it also supports the conclusion of the World Academy that effective economic theory must shift its basis from an inordinate reliance on financial and technological capital to recognition of the central role of Human Capital – individual and social – as the ultimate source and motive power of all wealth creation, welfare and well-being. Other forms of capital – natural, technological, organizational and financial – are functions of human capital – of the mental development, ingenuity and social inventiveness of human beings. Technology and financial capital dominated economic thought during the 19th century when a massive concentration of wealth was required for investment in physical infrastructure and huge industrial enterprises

and labor was largely regarded as a dispensable resource measured in horse power. In the still emerging knowledge-based service economy, human capital and social institutions will be the primary drivers and determinates of real economic development.

“Thought is the process of linking, relating and coordinating two or more facts by a common principle.”

8. Process of Wealth Creation

Economic theory must necessarily be premised on a conception of the process of wealth creation. NET can draw valuable insights by tracing the stages of the evolution in humanity’s capacity for wealth creation. The following list illustrates various aspects of the process of wealth creation, many of which are ignored by conventional economic policy but which powerfully contribute to economic development and have immense untapped potential for further enhancing human welfare and well-being.

- Observation of natural processes enhances humanity’s capacity to promote its welfare and well-being, e.g. observing the places and seasons where food grows, animals graze or fish swim. Observation spurs human thought. Thought is the process of linking, relating and coordinating two or more facts by a common principle. Close observation of Nature led human beings to first conceive of the possibility of imitating and improving on natural processes for food production, giving rise to the birth of animal husbandry and later agriculture.
- Production and transformation of resources by individuals and groups of individuals working in tandem make possible achievements that no individual can achieve by himself or herself. Division and specialization of function and skill among individuals and groups within a wider system of cooperation enable multiple tasks to be performed simultaneously and higher levels of skill to be developed and transferred.
- Exchange among individuals and groups that enables each to produce in excess of their personal need, on which they have a comparative advantage and exchange it for other goods and services produced or obtained by others. Exchange between individuals, organizations and groups over a wider geographic area enhances the incentives for maximum individual production and expands the range of goods and services for which each individual can exchange what he produces.
- Development and application of tools, technology and know-how have always been associated with humanity’s economic and social advancement – from the club, lever and knife to the most sophisticated mechanical and electronic devices, technology has been central to human social evolution. Yet it is only during the early 20th century that science-based R&D became an essential and integral part of business development.

Economic thought still lacks a coherent theory designed to maximize the process of human invention, innovation, creativity, imitation and adaptation.

- Human relationship and interconnectivity have always been the essential basis and driving force for economic development. Greater ease, extended geographic reach, growing frequency, increasing variety, complexity and integration of human interactions are a primary source of wealth creation. Social organizations enhance the effectiveness of human relationships. The invention of new technologies for social organization has been at least as important as – arguably more so – the invention of physical tools and processes. Among the most powerful have been the organizational technologies we call language, cities, markets, money and the Internet. These in turn have led to a plethora of offshoots and specialized social institutions such as wholesale and retail outlets, commodity exchanges, stock markets, warehouses, etc.
- The invention and widespread introduction of various forms of money to facilitate exchange of products, movement of capital, and storage of value mark an important stage in the evolution of economy. Yet inadequate attention has been given by all the social sciences to the properties and wider role of money as a social institution, the sources of its unique power, its capacity for inter-convertibility of economic power with other forms of social power, and its tendency to dominate them.
- Regulation is an inherent power of society essential for the full development of any activity. Informal activities, cooperation and exchange between individuals and groups acquire far greater power when supported and governed by an effective system of laws, regulations, procedures and standards to protect the rights of individuals and groups involved.
- Integration refers to the highest level of organized interrelationship in which each part, aspect, system, organ, activity, process and dimension interrelates and adapts to every other part of the whole, as illustrated by the perfect integration of the organs, systems and processes of the human body. The development and integration of technical education to support agricultural and industrial development in 19th century America were a major factor in the sudden and dramatic rise of the US to global economic prominence. The potential for further enhancing the levels of coordination and integration between different factors is given even greater impetus by the rapid pace of social evolution today and its potential is virtually unlimited. NET needs to take fully into account the integration of economic activities with activities related to law, governance, technological and scientific development, education, social relations, and cultural values.

In sum, wealth creation is a function of the whole society and depends on every other major and minor aspect of society, including political stability, freedom, rule of law, justice, transparency, social attitudes and behaviors, cultural values and attitudes, organizational and institutional capabilities, scientific and technological advances, education and training, protection and restoration of the natural environment.

Pixar was founded by George Lucas in 1979 to manufacture specialized computers and software for producing animated special effects and animated films for the motion picture industry. In 1986 Lucas sold Pixar to Steve Jobs for \$10 million. At a time when the company was bleeding money and drastically cutting production and employment, the head of Pixar's film division asked Jobs for \$300,000 to make a three minute animated video about talking toys to be used to demonstrate the efficacy of the company's products. Although the investment seemed risky and frivolous in view of the company's failing fortunes, Jobs took the plunge. Pixar soon stopped making computers and joined forces with Disney to produce Toy Story, the first in a series of blockbuster computer-generated movies. In 2006 Jobs sold Pixar to Disney for \$7.4 billion.^{9,10}

9. Social Power

Wealth creation is not the sole or necessarily the most important determinant of economic value as defined in this paper in terms of human economic security, welfare and well-being. The human impact of the capacity of the society to produce goods and services is very largely dependent on and governed by the overall exercise of power in society.

Power is the capacity to do work of any kind. Social power is the capacity to accomplish objectives within a social context. It is the capacity of human collectives for accomplishment in any field. Our capacity to access and disseminate information instantaneously, communicate around the world, visit other countries safely and with minimum ease, circle the globe in less than 80 hours instead of 80 days, make purchases and enjoy the latest entertainment from the comfort of our home, obtain world-class medical treatment and latest technologies, participate in selection of our political leaders and vote on new legislation are a few expressions of the incredible power society imparts to citizens today.

Social power represents the sum of the political, legal, economic, financial technological, organizational, educational, scientific, cultural and other powers of the society that enable it to achieve the objectives it sets for itself, as reflected in its capacity for self-defense, transport, communication, production, exchange, education, health, discovery, invention, entertainment, etc. All these forms of social power are transferable and inter-convertible.

This conception vastly expands the theoretical and practical instruments for wealth creation by viewing them within an integrated framework. It explains why improved physical infrastructure of roads, faster communication, improved public health, higher levels of relevant education, a sense of security from external threats, higher levels of confidence in public institutions and leaders, greater individual freedom and opportunity contribute to the overall power of a society to promote human security, welfare and well-being. It also explains why every society today is performing far below its full productive potential.

A vital distinction needs to be made between potential and actual social power and between productive and destructive applications of that power. The productive power of an economy can be properly evaluated in terms of its capacity to generate human economic

security, welfare and well-being for its citizens, present and future, in a manner that also promotes the security, welfare and well-being of other human beings outside its sphere of direct influence. The inability of an economy to fully develop and harness the actual and potential productive capacities of its people, social organization, knowledge and technology in such a manner is an expression of incapacity, wrongly or destructively directed power. High levels of unemployment and underemployment, low levels of education and vocational skills, concentration of wealth and purchasing power and political influence among a small minority whose capacity to meet its own economic needs is supersaturated are expressions of this inability. The full economic and social potential of a society can only be realized when all forms of social power are widely distributed and made readily available to all human beings, locally, nationally and globally.

The gap between potential and actual economic and social power depends on the way in which power is governed and distributed in society. All factors that limit the development, restrict the distribution or concentrate the accumulation and use of power to a section of society limit the overall power of the society to a fraction of its real potential. An authoritarian elitist state controls power for the benefit of a small ruling class. Corruption and plutocratic democracy restrict the real exercise of power to a wealthy minority. An economy dominated by large corporations restricts power to a few commercial institutions with strong political backing. A system of taxation that fosters rising levels of income and wealth inequality increases the effective power of the richest with the minimum need and incentive (psychological power) for wealth creation and limits the incentive of the majority with the greatest need and unfulfilled aspirations. A society with low levels or poor quality of education limits power to an educated class. Suppression of women and minorities, casteism, racial and religious prejudice and other forms of social-cultural discrimination confine power to dominant groups.

NET should incorporate within its purview all those factors which contribute to the development and utilization of positive, productive forms of social power to promote human security, welfare and well-being. Physical security, peace and protection, freedom of expression and action, rule of law, guarantee of fundamental rights (including the right to food, minimum needs and gainful employment), access to education and information, broad-based decentralization and uncentralization of authority as on the Internet, ease and speed of movement of all descriptions, flexible and responsive organizations, increasing the intensity of human relations and institutional linkages, respect for the right to differ and dissent, tolerance for non-conformity, encouragement for innovation and creativity are factors with unlimited potential for enhancing individual and social productivity, economic security, welfare and well-being.

10. Money

Money is a social organization and networking tool. It ranks alongside language, agriculture, cities and the internet as one of the most creative and important of all human inventions and a powerful instrument for the evolution of society. But like all human inventions, it has the capacity to serve and promote human welfare or dominate and destroy our freedom

and undermine our security. Today the instrument dominates its creator resulting in gross distortions and perversions of our social existence. A fuller consideration of the remarkable characteristics of this social invention and its relevance to NET is considered elsewhere.^{11,12,13} Only a few observations will be made here.

“The root cause of inflation as an expression of the irrepressible human aspiration for upward social mobility and its historical importance in transforming violent revolution into peaceful social evolution are ignored.”

Regrettably, social science has considered money only in the narrowest sense of an economic tool and left its study almost exclusively to the purview of conventional economic theory. The raging struggle in Europe today over monetary policy places inordinate emphasis on central government debt and inflation and overlooks the essential role played by money in the effective mobilization and utilization of other social resources, inflicting untold costs in terms of lost productivity and creativity, diminished human security and welfare. The understandable aversion to extreme levels of debt has nearly obscured the remarkable ingenuity and sound underlying principle of debt as an instrument for development. Indeed, the collapse of the Roman Empire has been attributed to the fact that the principle of public debt was unknown at the time.

The notion of debt limits is based on a convention amounting to superstition, rather than sound theory. Relating appropriate levels of debt to GDP is an unsound comparison of a stock with a flow. A more appropriate basis for measuring debt would be the total productive value and potential of assets in the country. Policies that restrict the development and utilization of those productive assets are inherently counter-productive. The euro controversy highlights the inextricable linkage between monetary power and political power and provides compelling evidence of the need for a more integrated perspective and social structure in which money creation, fiscal policy and public welfare are the common responsibility of the same government.

Financial markets which were conceived to support development of the real economy now destabilize that economy and divert resources from real wealth creation to accumulation of negative social power. Beyond its utilitarian economic function, money plays a central role as an instrument of social and political power which involves fundamental issues regarding democracy and social equality.

The stark contrast between contemporary theory and NET can be illustrated by their dealing with the phenomena of inflation. The prevailing orthodoxy that inflation is a negative phenomenon has almost acquired the sanctity of universal law. Extreme instances of hyper-inflation, the abhorrence of wealthy lenders and the popular resentment of the middle class electorate are cited as self-evident confirmations. The root cause of inflation as an

expression of the irrepressible human aspiration for upward social mobility and its historical importance in transforming violent revolution into peaceful social evolution are ignored. Rational social science must rise above the dogmas and prejudices of prevailing beliefs and objectively examine inflation, public debt and similar phenomena at the level of first principles, rather than superficial appearances or anecdotal evidence.

11. Towards NET

Contemporary Economics possesses valuable insights into many aspects and dimensions of economic activity and powerful analytical tools useful for a wide variety of specific applications, which will continue to be of value after economic theory has evolved far beyond the present boundaries, just as Newton's and Boyle's laws continue to hold true after the advent of Relativity and Quantum Theory. The validity of what now exists is not a valid argument for maintaining the status quo, just as the deficiency of current theory is not a valid argument for rejecting all that is of proven utility. That said, it is still important to try to envision the ways in which future theory will markedly depart from what now pertains.

It is indeed difficult to fully imagine the contours, let alone the complete content, of NET and the other social sciences which are yet to emerge. Nevertheless, it may be possible to glimpse some of the ways in which they will differ from mainstream social science as we know it today. It is ironic that the nearest distant approximation may be found in the field of management science, which is barely and very hesitantly accorded the status of a science by other social science disciplines. However imprecise, imperfect, anecdotal and lacking in quantitative supporting evidence it is today, the 'science' of Management may be the closest thing we now possess to a complete and effective trans-disciplinary social science. At the very least, it may provide us with an indication of the future directions in which other social sciences need to evolve.

Organization is the central principle of Management Science. Most theoretical and applied research focuses on the structure and functioning of the commercial and non-commercial organizations in their relation to the individual persons who work within them, the activities they perform, the processes and systems they utilize, the wider world of stakeholders with which they interact and relate, and the more general environment – commercial, economic, legal, political, social, cultural and ecological – within which they exist and operate.

Successful organizations of any description must necessarily take into account and address all these levels and dimensions of 'reality' in theory or at least in practice. The most successful are those that consciously conceive and perceive the relationship between these different aspects and view them as aspects of a single integrated whole – an organization consisting of individuals, functions, systems and activities internally coordinated and integrated with each other and also related, coordinated and integrated to differing degrees with the wider social system and environment of which it is a part.

Successful theoreticians and organizational leaders are cognizant of the fact that the overall performance of an organization depends on both the development and the integration of these three organized dimensions of reality – the psychological organization of the indi-

vidual microcosm, the social organization of the collective macrocosm and all the levels of organization in between – individual department, firm, agency or other entity, industry, local or national economy, etc.

Successful leaders are also conscious of the fact that the rigid boundaries between financial, economic, political, legal, scientific, technological, social, cultural, psychological and ecological factors are purely conceptual. There are no dividing boundaries – only interrelated aspects of a single integral reality. No company can exist and function independently from the market, legal context, social and cultural environment within which it operates.

Furthermore, however abstract and lifeless it may appear when depicted on an organizational chart or matrix or mechanistic diagram of interrelated systems, functions and processes, successful organizational leaders are also conscious of the fact that an organization is alive – a living organism – activated by human energy and aspirations; directed by conscious and subconscious intentions (ideas, values, beliefs, opinions and attitudes); combining individual action with coordinated collective activities; governed by an intricate combination of personal authority and impersonal rules and procedures; expressing that energy and intention in an organized manner through knowledge, skills and technology to produce results.¹⁴

Management Science necessarily comprehends and strives to take into account theoretically and practically the contributions to value addition of knowledge, skill, structure, systems, networks, authority, information, communication, rules, procedures, laws, leadership, power, process, procedure, cooperation, coordination, integration, internal harmony among individuals, external relations with individuals, other institutions and the wider social environment.

From this perspective Management may be regarded as the most complex, integrated and effective social science related to wealth creation. It places central emphasis on purposeful human behavior and social processes, rather than impersonal laws of economics. It is human-centered, recognizing the central role of human intention, awareness, knowledge, skill and motivation. It encompasses market, technology, finance, organization and people within a comprehensive organizational framework. It integrates the individual, organizational and social dimensions of human activity. It recognizes the importance of both objective material and environmental factors and subjective perceptions and attitudes of people inside and outside the organization. It is global in scope without limitation by national boundaries. It consciously acknowledges and founds theory and practice on the central place of values in human performance.

12. Practical Implications of NET

It is far too early to assert with confidence the full implications and impact of NET on human economic security, welfare and well-being, but it is similar in magnitude to the consequences of the evolution of Physics during the 20th century. At this point we can only point out a few of the more obvious ways in which it is likely to make a considerable difference:

1. NET can provide theoretical justification for recognition of gainful employment as a fundamental human right and essential condition for full exercise of economic rights

in a market economy, the equivalent of the right to vote in democracy. Creating all the essential conditions to access and capacity to obtain remunerative employment of every citizen who seeks work is the optimal strategy for maximizing economic security for all, at least to the extent that social security systems are unable to fully disengage economic welfare from dependence on employment.

2. NET will support a more fundamental shift in thinking from the preoccupation with the quest for precision and certainty which characterize the efforts of 'Newtonian Economics' for control to an emphasis on risk assessment, management of uncertainty and unleashing of dynamic creative social processes in an effort to maximize human security and accelerate positive social transformations.
3. NET can lead to the development of new types of tools to measure human economic security, welfare and well-being and sustainability. The gross inadequacy of existing measures such as GDP has been well-documented and widely discussed. Yet in spite of widespread criticism, the use of GDP as a proxy for economic progress is commonly relied upon by economists and other policy makers. GDP registers in positive terms economic activity that results from destructive activities such as war, arms exports, rising costs of domestic security and policing, natural catastrophes, crime, rising medical costs and the drug trade, which reflect a deterioration in human welfare and should be deducted rather than added to national product. A measure of economic activity (flow) rather than wealth (stock) fails to take into account positive and negative changes in the total of natural and other forms of capital: thus, the depletion of non-renewable natural resources is valued at the cost of extraction or current demand without taking into account replacement value. GDP makes no distinction between revenues from speculative financial transactions that benefit the top one percent and production of essential goods and services that benefit the masses. Other implicit and largely uncontested premises relate to the value of advanced labor-saving technologies, the value of capital accumulation and savings, unrestricted market access, intellectual property rights and public debt. The Human Economic Welfare Index (HEWI) was developed in 2010-11 by Ivo Šlaus and myself to illustrate an alternative quantitative index based on a modification of GDP.¹⁵
4. NET can restore the rightful place of money and financial markets and eliminate the theoretical justification for speculative financial activities that undermine global human welfare.
5. NET can resolve the incessant debate regarding the apparent contradiction between private interest and public good by reconciling them within a larger formulation of human security, welfare and well-being that takes full cognizance of the mutual interdependence between these two aspects of social reality. The creative individual is the catalyst for all social innovation, development and evolution. The development and evolution of the collective ensure the greatest possible distribution of benefits to its individual members. NET can best be founded on a conception that recognizes these two dimensions as mutually complementary rather than mutually antagonistic.

6. NET can foster the development of institutions and policies at the global level designed to foster the economic security, welfare and well-being of all human beings in all countries as the optimal strategy for the operation of the global economy and an essential requirement for the fulfilment of the full range of humanity's political, social, cultural and psychological aspirations. Maximizing economic security, welfare and well-being for all will also contribute to maximizing the political, social, psychological and ecological security, welfare and well-being of all.
7. NET can compel a re-evaluation of current laws and public policies to determine their contribution and compatibility with the explicit aim of maximizing human economic security, welfare and well-being. This may include that which relates to natural resource rights beneath the surface of land, taxation of natural resource mining and consumption, law and taxes on pollution, the length of protection for copyrights and other forms of intellectual property, corporate campaign financing, tax rates on payroll and capital gains and on accumulation and inheritance of wealth, right to education and healthcare, etc.
8. NET must necessarily incorporate ecological factors in a manner that reflects the true cost of economic activities, assessed in terms of their value to present and future generations rather than the immediate costs of extraction and utilization. It needs to incorporate the concept of negative or deducted value to reflect the detrimental impact of pollution and ecological disruption on human beings and their physical and social environment.
9. At the same time, NET can lay to rest the theoretical debate about limits to growth by making evident the unlimited potential for the future development and evolution of human beings and society. Some natural resources are finite in quantity, exhaustible and non-renewable, but the potential resourcefulness of the human mind and imagination, which ultimately determines the productivity of those resources, is not, as Harlan Cleveland, past WAAS President and a leading member of the Club of Rome, so often insisted.
10. NET can provide theoretical and practical support for the evolution of truly representative, democratic institutions freed from the inordinate influence of money-power, which distorts, subverts and perverts public policy to serve a small élite at the expense of the public-at-large.

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Can we Finance the Energy Transition?*

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Abstract

The energy sector is pivotal to our aspirations for a sustainable planet and yet two major challenges face policymakers worldwide. The first is to decide what set of technical choices provide the best solution to meet social, economic and environmental agendas; and the second is to decide how these choices can be financed. The bulk of new energy demand will come from the emerging economies where energy demand is expected to increase by 40% over the coming three decades and to have doubled by the middle of the century. However for a number of reasons the investment needs of the energy sector are likely to rise even faster than overall energy demand. This is due to a number of factors over and above the increase in demand and described in the paper, including, inter alia, subsidized prices; the substitution of traditional energy for modern energy; the growth in peak demand in the electricity sector; the rising costs of securing primary energy resources; and the urgent need to replace vintage capital stock (including the decommissioning of nuclear power plants), especially in the developed countries. Clean energy investment will also incur high upfront investment costs in order to reduce long-term recurrent costs (fuel and maintenance). High priority must be given to energy demand management (both to reduce energy use and to reduce energy capital) and investment in upgrading of existing capital stock can provide strong and quick returns. However, the net result of the long-term demand on the energy sector is that investment needs will grow dramatically, from around US \$1.6 trillion per annum to over US \$2 trillion per annum. The financial challenge is considerable. A level playing field is required that encourages greater competition of technology choice on the basis of correct pricing signals. It will require changes in subsidy policies in order to release finance and to encourage efficient investment; adherence to least-cost planning and investment decisions; changes in decision-tools especially the use of high discount rates and inadequate accounting rules; a stable and appropriate price for carbon, the largest economic externality in the sector; and a major uplift in efforts to conserve both energy and capital. Innovative schemes between public and private finance should be deepened. Long term institutional capital (such as pension funds and sovereign wealth funds) are an important growth area for energy funding. "Green bonds" have shown promise and are growing fast. Public finance, bilateral and multi-lateral, must be increased to address the major public good issue of climate change. However, at heart, lies a financial sector not equipped to provide finance to the real economy and to the kind of investment streams outlined in this report: an overhaul

* This note was originally submitted to the Annual General Meeting of the Club of Rome in Mexico, October 2014 as a background note for the discussion session "World Energy Outlook and Sustainability in the World and its prospects."

of the global financial sector must underwrite any of the specific financing efforts proposed in this paper.

1. Background

1.1. The energy sector (together with its sister sector, food and agriculture) remains pivotal to the future sustainability of the planet. Energy is required for all walks of life in all countries and by all people. It is also central to concerns about local health and safety as well as environmental concerns, especially global climate change.

1.2. All governments have an expressed desire to provide their citizens with clean, affordable and modern sources of energy. In doing so there are two essential and interconnected challenges facing policymakers. The *first* is what technical choices make the most sense from a social, economic and ecological point of view. The *second* is how (and indeed whether) the choices made can be financed in a manner that is feasible and fiscally prudent.

1.3. This paper explores both challenges and, while recognizing that technical choice is also a function of cost, notes that the financing challenge may be significantly more challenging than many realize and that, as a result, sub-optimal technical solutions may well result. It suggests that a major effort is required over the coming two decades to create the fiscal space for a major boost to energy investment on the one hand but also to place energy demand management as a much higher priority activity than it currently receives.

1.4. This note pays special attention to the electricity sector as the sector likely to be most influential in driving energy policy; in curtailing demand; and as the sector that will require the bulk of capital investment over the coming decades.

2. Global Primary Energy Resource Demand

2.1. Estimates vary with regard to the growth in energy demand but plausible scenarios suggest that a continuation of energy demand is likely. The past three decades have witnessed a doubling of energy demand, roughly in line with GDP growth. The current energy balance of primary energy consumption is broadly as follows: 78% fossil fuels (with oil at 33%, 21% natural gas and 24% coal); 5 to 6% from nuclear fuels; 17% from hydro resources (and other renewable energy resources) and the remainder 11% from biomass.*

2.2. There is a broad consensus on the likely trajectory of energy demand over the coming three or so decades. Most analysts predict around a 1.6% per annum increase in primary energy through to 2030 (a 36% to 40% increase) and a somewhat slower rise thereafter. This, in turn, implies a doubling of primary energy demand by 2030 and a trebling of demand by the middle of the century.

2.3. The main drivers of energy demand are:

* There are many studies of current global energy consumption but most are within the ranges quoted in this note. See Gian Paolo Beretta "World Energy Consumption and Resources: an outlook for the rest of the century" Dipartimento di Ingegneria Meccanica, Università di Brescia. Also International Energy Agency, "World Energy Outlook"; and IIASA: "Global Energy Assessment". All are broadly consistent and for purposes of this note broad orders of magnitude rather than precision are in order.

- Population and demographic shifts with some 1.5 billion or so added to the global population (mainly from non-OECD countries) by 2030 and a large scale migration to urban areas.
- Income growth and the distribution of income: GDP growth is anticipated to double through 2030 with a growing middle income class with increased energy needs. Structural changes within the global economy will also have an effect.

2.4. What is of vital importance is the fact that all projections note that almost all of the energy consumption growth in that period will be in non-OECD countries (between 90% and 95% by most estimates)*. Energy consumption in OECD countries is expected to grow but at a slower rate and, depending upon the nature of energy demand measures, could plateau or fall slightly. What is also of importance is that primary energy utilized to generate electricity is expected to grow at faster rates than energy overall. This, in part, reflects the need to provide those, currently underserved, with clean energy.

2.5. Such estimates provide a useful benchmark against which policies on energy demand management; on the energy transition from traditional to modern energy sources; and on investment strategies can be formulated. There is considerable uncertainty around growth projections and energy demand is highly sensitive to income.† On the other hand from a strategic and global viewpoint general directions and understanding of choices are as important as reaching out for precision. There is no doubt energy needs will grow and under almost all plausible scenarios complex choices await the analyst and decision-maker.

2.6. If uncertainty pervades our understanding of overall energy demand it is also reflected in policies towards technical choice and fuel use. The past one hundred and fifty years have witnessed major economic, social and technological progress on the basis of fossil fuel based energy followed some sixty years ago by the promise of low cost nuclear energy. The present period is one of important inflection with regard to energy choice. New factors relating to shifting paradigms on investment and recurrent costs; the rising costs of fossil fuels; and the imperative of dealing with local and global environmental impacts have reshaped the debate and, indeed, investment strategies.

3. Global Energy Investment

3.1. While there is a clear link between the overall demand for energy resources and the required investment resources they do not perfectly co-vary. The demand for investment needs in the energy sector will be driven by a number of factors:

- i. Overall growth in energy demand;
- ii. The fundamental role of energy pricing;
- iii. The level and pace of substitution of traditional energy for modern clean energy;

* In all scenarios the Asia and Pacific region dominates in terms of expected future energy consumption.

† An article in the *The Economist* magazine (September 2014) noted that economic growth in many rapidly emerging economies had stalled and may rise at lower rates than previously expected. For purposes of discussion, modest changes to growth rates do not alter the overall assessment of an increasing demand for clean and modern energy.

- iv. The growth in peak demand relative to base demand in the electricity sector;
- v. The overall change in relative costs of securing new energy (renewable energy, fossil fuels) including the extent of rising costs of exploration, development and delivery in the oil and gas sectors;*
- vi. The pace at which vintage capital stock turnover requires new or life extension investment; and
- vii. The potential “lock in” or “path dependency” trajectories of decisions taken over the next decade.

3.2. These issues are considered below in order to form a view on the likely demand for investment resources in the energy sector. The expectation is that demand for finance is likely to rise at a faster rate than the demand for energy due to a number of factors that are discussed in the sections below.

Energy Demand

3.3. As noted the base case scenarios are all consistent with a 40% increase in demand by 2030 and perhaps a doubling by 2050. Most scenarios already make assumptions about improving energy efficiency: a straight line extrapolation from today’s consumption would broadly lead to a doubling of demand by 2030 and a quadrupling by 2050! Certainly this would carry a global public health warning as a scenario that most would conclude as the paradigm of un-sustainability.

3.4. The curtailment of energy demand represents a key pillar of analysis of future consumption patterns. Historically, the relationship between GDP growth and energy use has been stable, at an elasticity of around 1. Electricity demand has typically outpaced overall energy demand with a GDP elasticity closer to 1.2. There are good reasons to wish to change this relationship and it seems to be technically feasible to do so. A wealth of literature has been developed which indicates that technical options now exist to reduce overall energy consumption dramatically while still maintaining economic growth. Ernst von Weizsäcker *et al.*¹ have ably demonstrated that significant savings are potentially available that could reduce consumption in energy use by up to 80%.[†] Many of the options in this and other publications point to the large range of negative marginal cost actions that could be taken to reduce energy consumption. These “no regrets” investments with seemingly highly attractive Financial Rates of Return (FROR) that are technically and economically viable have not been universally taken up: most analysts still draw marginal cost curves that begin under the zero axis and remain there for quite some time. The question is why? What are the barriers to achieving, in the first round, these energy savings? The underpricing of energy is certainly one factor.

Energy Pricing Policies

3.5. While there are many non-price barriers to securing major energy savings (such as

* At a time when the long run marginal cost of securing supplies is rising and, with recent price declines, the short run financial revenues are declining.

† The majority of case work under Factor Five is in the rich world (with some examples drawn from China).

asymmetric information, human capacity, knowledge etc.), the main driver is pricing or perhaps better formulated as the underpricing of energy. This unfolds along two broad issues. The *first*, and often unstated, is that (certainly in emerging economies with high economic growth) achieving a positive FROR (above the discount rate) is a necessary but insufficient condition for investment. Higher rates of return can squeeze out seemingly positive investments in energy efficiency. The *second* is that the “cost of un-served energy” to the economy in emerging economies often provides* an impetus for inaction when it comes to investing in energy efficiency†. But perhaps the larger effect is simply the level of subsidy provided to the energy sector.

“A calculation by IEA suggested that in 2010 only 8% of the global fossil fuel subsidy was provided to the poorest 20% of the population.”

3.6. Subsidies are essentially of two types: *financial* (the market cost to the producer and consumer) and *economic* (the cost to society or, in the case of global public effects, the planet). Subsidies exist on both energy (fossil fuels in particular) and on energy capital (mainly in the electric power sector).

3.7. *Liquid and Gaseous Fossil fuel subsidies* are pervasive and vary with the international price of fuels. In 2008 it is estimated that they (oil and gas) reached a level of around US \$400 billion. The International Energy Agency (IEA) has estimated that in the absence of a dramatic pricing reform agenda such subsidies could reach around US \$660 billion by 2020, equivalent to 0.7% of global GDP.‡ The rationale for such subsidies, which are highly distorting, varies but most often quoted is to protect poor consumers.§ IEA as well as other assessments¶ all point to the inefficiencies and level of leakage in such policies. A calculation by IEA suggested that in 2010 only 8% of the global fossil fuel subsidy was provided to the poorest 20% of the population: a high cost and inefficient subsidy.** Even more telling is that IEA estimates that removal of subsidies could cut fossil fuel consumption by over 4% by 2020.††

* When I worked on the energy sector in a number of Asian and African countries, the cost of un-served energy (in the form of electricity) was often quoted at around US \$1 per kWh. This was defined as the cost to GDP growth of a kWh not delivered: and was approximate. In countries which were severely power short (many emerging economies) the electricity dispatcher (not to mention the local politicians) was keen to operate inefficient power plants well beyond their capacity, with no let up for routine maintenance and upgrading. Perversely this had both an economic and a political rationale!

† A recent study by the World Bank and summarized in *The Economist* magazine (September 27 – October 3, 2014) notes that the cost of un-served energy in Africa is significant. It notes “the World Bank reckons that power shortages trim more than two percentage points from an annual growth rate in GDP on average in Africa: in Nigeria the loss has been almost four percentage points a year”. This can have several effects including the operation of highly inefficient power plants and private investment in sometimes sub-optimal private power facilities. Equally it could have a positive and offsetting effect if private investment in clean energy occurs.

‡ See International Energy Agency (IEA): “World Energy Outlook” 2011 as well as various papers produced by IEA. According to the International Monetary Fund (IMF), the 0.7 GDP figure had already been reached by 2011. This represents around 2% of total government revenues: a not inconsequential amount.

§ A second rationale is to promote and protect industrial development: again with high leakage and inefficiency outcomes.

¶ The World Bank routinely reviews the distribution of energy and electricity subsidies and invariably concludes that the level of leakage to higher income groups means that it is an extremely inefficient means to target poor consumers. Subsidy policies of this kind require strong institutions to administer and monitor. In the rich world lifeline tariffs are routinely managed to target poor consumers. The tendency in many countries is to provide broad-based subsidy underwrites rather than selective and focused targeting.

** The fossil fuel subsidy is evenly distributed amongst fuels with kerosene (at around 15%), the largest, and suggests that the driver behind subsidy policies is poverty alleviation.

†† This would simultaneously cut growth in GHG emissions by around 1.7 Giga tonnes during the same period.

3.8. *Coal and coal derivative subsidies* are not as large as liquid fossil fuels but nevertheless are substantial.* OECD has estimated financial coal subsidies (in OECD countries only) at around US \$12 billion annually. A more recent survey by the International Monetary Fund (IMF) indicates a much larger global figure of around US \$539 billion annually but this includes imputed figures for global and local damage functions (the economic subsidy as defined later in this note).†

3.9. *Subsidies to the nuclear energy industry* are pervasive throughout the nuclear fuel, construction and deployment cycles. It is hard to know where to begin. The largest subsidy appears to be in facilitating the buy down of investment costs and, in the future, there will be a need to add to this the costs of decommissioning. These are dealt with later in this note. Legacy subsidies that now count as sunk cost are also of intrinsic interest and estimates as high as US \$5.9 cents per Kwh have been assessed.² The extent to which R and D functions are a subsidy is also clouded with uncertainty.[‡]

3.10. Smaller and more recent but nevertheless increasingly important is *the subsidy to new and renewable energy sources*. The most common financial subsidy is through feed-in tariffs providing an incentive to invest in renewable energy. Estimates are in the order of US \$88 billion (2011).[§] Typically, subsidies are provided through feed-in tariffs which require consumers to purchase electricity generated by renewable energy.

3.11. *Electric Power Subsidies* are also important. Some of the overall subsidy comes from the subsidized fossil fuels, coal, nuclear and renewable energy (including hydro) used in power generation but this may be only the tip of the “subsidy iceberg”. The electric power sector is the most capital intensive of energy sectors and requires capital investment in the region of US \$800 billion to US \$900 billion per annum over the next few decades.[¶] Subsidies are provided through a variety of means and a number ways of calculating them have been identified in the literature.

3.12. A simple concept is to consider an electric utility that funds its current energy assets and future expansion program. The financial subsidy (or surplus) is total expenditures on the recurrent fuel and non-fuel cost of generation, transmission and distribution of energy plus the cost of operations and maintenance, plus the cost of debt servicing the current and planned investment expansion program *minus* the revenue or income from sales of electricity (tariffs). Financially few utilities in the emerging world cover these costs with perhaps

* There are a number of important definitional problems in calculating coal subsidies. In particular producer subsidies are especially difficult to measure.

† The IMF imputes figures for damage functions at both the local and the global level and adds these to the financial (or what the IMF terms pre-tax subsidy) to derive a post-tax (or economic) subsidy. The IMF used US \$25 per ton for GHG emissions (global external effects) and US \$65 a ton for local pollution damage. The figure for the global damages seems quite low: other studies range from 40 to around US \$125 per ton. The figure for local damage is derived from research in the USA.

‡ For example stranded asset charges as an example of uneconomic subsidies were calculated by the Union of Concerned Scientists to be around US \$110 billion by 1997: few updated figures seem to be available.

§ “The International Energy Agency (IEA)” estimated that in 2011 subsidies to renewable energy were US \$88 billion. These are still overall small relative to fossil fuel subsidies although a counter argument is often made that on a per energy unit basis fossil fuel subsidies are three times greater than those for fossil fuels. The renewable energy subsidy refers to both small scale renewable energy and commercial hydro-electric dams.

¶ IEA estimates. In the author’s view these may be under-estimates and the final figure may be closer to US \$1 trillion. It is not clear whether the full costs, for example, of nuclear power decommissioning are included. In addition, since much of the capacity is in emerging economies the potential for real cost escalation and financing interest during construction (IDC) can balloon costs even further.

a 25% to 30% internal cash generation ratio at best (and many a great deal lower). In other words, the financial subsidy is large and likely growing and the incidence is disproportionately shared by developing countries.

3.13. Yet if the financial subsidy is confusing and flows from a myriad of sources, the economic subsidy in the energy sector represents a journey that is closer to seeking the “Holy Grail”. The economic subsidy includes the financial subsidy as well as the cost of all externalities in the process of energy production, transformation and delivery and, importantly, it includes the costs of deviating from least cost economic investment. It is larger than the financial subsidy and represents a major drain on society’s resources. The main drivers of the economic subsidy are:

- i. The extent to which investment plans and decisions deviate from the economic least-cost solution;*
- ii. The value of environmental externalities at both the global and local levels and, increasingly, the value attributed to greenhouse gas emissions;
- iii. The value of water utilized in the extraction and use of energy, especially in the new non-conventional energy sub-sectors;† and
- iv. The need to take long-term investment decisions and, given the high indivisibilities in large investments, an understanding of the shape and direction of the long run marginal cost curve for energy sources.‡

3.14. While large uncertainties exist about the precise nature and scale of subsidies and while methodological differences and nuances abound, there is little controversy over the fact that energy subsidies are enormous and appear to be growing, whether calculated on financial or economic grounds.

3.15. Energy subsidies have a number of important perverse and negative effects:

- i. They can have a chilling effect on potential investors through low profitability and therefore discourage private investment;
- ii. They have an adverse effect on fiscal balances and public debt;
- iii. They crowd out other subsidy programs that would have a higher social and economic return in sectors such as education or health;
- iv. They distort public and private investment decisions by sending market signals that do not reflect economic priorities; and
- v. They induce excess consumption with low incremental social returns and negative environmental consequences as well as increase leakage and sub-optimal consumption.

* This is often the reason given for high subsidies in Africa for example. See IMF op. cit. and World Bank studies.

† A recent report by the World Resources Institute (WRI) has evaluated the impact of water use in hydraulic fracturing (“fracking”). Almost 40% of shale resources are in arid and semi-arid areas where water costs are high (and rising) and downstream water pollution represents a high economic diseconomy.

‡ Several studies on energy subsidies have made the point that a major part of the subsidy is taken up by the mere fact that decisions in the sector produce sub-optimal economic investment. The economic subsidy could be reduced considerably by better planning.

3.16. In sum, any attempt at re-shaping our global energy systems and seeking the finance to do so must start with a critical look at subsidies, their rationale, and their eventual elimination other than for highly targeted social objectives. Phasing out of both financial and economic subsidies over a clearly defined period while adjusting relative energy prices can be achieved. Linking such decisions with technical investment in energy demand management and in forward planning least-cost investments could make a major difference to overall costs and financing needs.

The Substitution of Traditional Energy for Modern Energy

3.17. The desire to provide clean modern and accessible energy to citizens is almost a universal aspiration. It changes energy demand only marginally but can have a profound impact on investment needs and explains why electricity demand is often greater than overall energy demand.

3.18. In many countries of the world citizens consume too little and not too much energy. They do so through the drudgery of seeking traditional and often inefficient fuels and they often place access to clean energy as high a priority as access to clean water and food. The numbers remain staggering with an estimated 1.3 billion people (18% of total population) without access to electricity and 2.6 billion (38% of total population) without access to clean cooking facilities. More than 95% live in Sub-Saharan Africa. An OECD/IEA report has estimated that a cumulative investment of around US \$1 trillion will be needed through 2030 to meet the United Nations' aspiration of energy for all. This represents around US \$50 billion a year, almost a fivefold increase in current investment levels.*

3.19. Not only has the demand in emerging economies for modern energy accelerated but demographic factors have also played an important part in driving investment. In particular, the growth in urban areas and the continued migration out of rural areas has increased demand for urban electricity distribution. Many developing countries have found it impossible to keep up with the demand and this has resulted in sub-optimal investment strategies and weak management arrangements. As a result, losses in the transmission and distribution (T&D) systems of many countries have increased. In the rich world losses average 8% but in developing countries the average is around 15%, with some low income countries experiencing losses of over 50%.† This places a major strain on the financing of distribution, especially given the rapid rise in urbanization and urban energy demand.

The Growth in Peak Demand

3.20. As noted, the energy sector is both energy and capital intensive. Electricity systems must meet energy (KWh) needs but they must also have sufficient physical capacity to meet capacity demand (KW) when it is at its highest. Much attention, more recently, has focused on the need to reduce energy use on both efficiency and environmental grounds. However, if

* There are many studies that have reviewed the energy poverty nexus. See for example: Shonali Pachauri and Daniel Spreng "Energy use and energy access in relation to poverty", Centre for Energy Policy and Economics, Swiss Federal Institute of Technology. Also see OECD/IEA website on "Modern Energy for All" and various World Bank and United Nations publications. All recognize the importance of universally providing modern and clean energy both as a cost factor but also in terms of environmental (climate change and forest loss) and social impacts (reducing drudgery especially amongst women).

† For example: Botswana (58%), Haiti (55%) and Republic of Congo (46%). These losses are both financial and economic as they include technical losses and non-technical (mainly illegal connections in slum areas). This is an unusual case where economic losses are smaller than financial losses as illegal connections provide no financial revenue but energy is still provided.

attention is not simultaneously paid to both aspects it can lead to financial problems for the sector. If peak demand is not reduced then reducing energy use simply reduces revenue but not capital investment requirements. Energy demand and capital use must go hand in hand: peak shaving is as important as reduced energy.

3.21. Peak demand is driven by many factors: temporary movements of population in times of tourist seasons; extremes of temperatures and the demand for air conditioning or heating; and unforeseen events. It is plausible that demand is becoming “more peaky” as incomes rise and middle income requirements for air-conditioning must be met. In a similar vein, setting a “reserve margin”, especially where intermittent energy sources are an integral part of the system can also lead to spiraling additional capital costs. Setting appropriate reliability standards and carefully managing capacity reserve margins will become a key issue for energy investors.* Nevertheless, there is a plausible argument to suggest that the drive to reduce energy use in the absence of capacity use will affect levels of investment and potential financial viability. It is an area at least to factor in to the investment equation globally.

The Changing Costs of Securing Primary Energy Resources

3.22. There is a growing body of literature about peak oil and its potential implications. This note does not concern itself directly with that issue but rather postulates that irrespective of when peak conditions may be met, almost all forms of primary energy supply are facing a steep and, in some cases, a discontinuous marginal cost curve and as the search for ever more expensive resources accelerates it drags with it significant investment resources. As prices have risen, especially in the fossil fuels sector, the expected fuel switching to alternatives has been obfuscated by a tendency to move up the marginal cost curve to ever more costly alternatives. A prominent oil company has noted: “High prices and technological innovation have unlocked vast unconventional resources in the US, reversing the trend of falling output and altering global energy balances.” It further notes, “Globally there are an estimated technically recoverable resources of 240 billion barrels (Bbls) for tight oil and 200 trillion cubic meters (Tcm) for shale gas”.³ It is estimated that Asia has about 57 Tcm of shale gas and 50 Bbls of tight oil. Whether the non-conventional boom is a temporary bubble remains to be seen but it is dragging new investment funds into the sector and potentially away from less polluting sources. The economic costs of exploration, recovery, and transportation are somewhat unknown. The costs of energy required, extensive water use, potential land disturbance, and chemical usage are also contentious. Technologies for the recovery of shale gas hold other uncertainties related to the potential for fugitive methane emissions. New risks, higher costs and potentially important environmental consequences are as unconventional as the technologies themselves. The extent to which investment in shale and other non-conventional oil and gas sources (such as tar sands) will rise depends on many factors. Nevertheless, major oil and gas corporations appear to have forgotten earlier promises to move beyond petroleum and towards a new generation of low polluting fuel sources. Most oil companies have returned to their roots and are willing to invest in higher exploration and production costs for fossil fuels.

* There are many ways in which levels of reliability (called “loss of load probability”) can be measured and factored into investment decisions on electricity systems. As will be noted later in this note, managing energy and electricity as a system can provide the basis for significant savings.

3.23. Investment costs in hydro-electric facilities are also facing an upwards cost curve. The “low hanging fruit” hydro projects were exploited over the past hundred years* and while considerable potential remains unexploited (estimated at some 4.8 times greater than today’s hydro electricity generation) it is almost certainly likely to require a major uplifting in capital costs. For many years a useful rule of thumb was around \$1,000 per KW installed. This is now at the lowest end of the cost spectrum with costs rising as high as \$7,650 per KW (for large hydro) and over \$8,000 per KW for small hydro plants.⁴ Environmental and social factors have also become a major additional cost and political issue for hydro development including resettlement costs (including those affecting traditional and indigenous peoples), loss of biodiversity, downstream effects and concerns over reservoir management (e.g. methane emissions). These costs, largely social and economic, are rarely factored into the financial cost base. Two other “hidden” costs are likely to drive up overall cost estimates also. The *first* is that, especially in the case of large and complex hydro sites, delays (often measured in years and months) can increase interest during construction (IDC).[†] The *second* is that climate driven variability may induce greater operational uncertainty and potentially lower levels of electricity generation than originally planned.[‡]

3.24. Natural gas has played a central role in the transformation of the energy sector and recent estimates⁵ suggest that there are at least a further 250 years’ worth[§] of natural gas globally to be exploited, in large measure due to the new techniques of extraction from “non-conventional” sources and by new techniques (such as hydraulic fracturing).[¶] Natural gas has been heralded as clean, low cost and of flexible supply.^{**} However, natural gas also faces the uphill journey on the cost curves as next generation gas is either far from demand centers or, as noted, must come from high cost new generation techniques. From a global viewpoint, natural gas leakages are important as their global warming potential is significantly above that of carbon dioxide.^{††} In addition, some countries have concerns over the security of piped supply:^{‡‡} for example, recent concerns expressed in Europe over dependency on natural gas from Russia or issues that have arisen between Chile and Argentina. Placing a price premium on security of supply would provide an incentive for localized production, especially of renewable energy.

* Worldwide there is about 1,000 GW of installed hydro capacity with ten countries accounting for two thirds of installed capacity. Worldwide hydro accounts for about 16% of total electricity generation with a wide range including Norway, Brazil and Venezuela where it represents more than 70% of generation.

† These are costs incurred by the developer and project owner when interest is due on debt but the asset is not producing revenue. Delays in construction can often balloon the overall cost of the project.

‡ The author already has witnessed this effect in Chile in the early part of this decade. As a result of fluctuating and unexpected hydro conditions electricity generation from Chile’s hydro system was reduced considerably with a high economic cost to the economy.

§ Estimated in 2013 at 6,846 trillion cubic feet of dry natural gas (IEA).

¶ As an example of the growth in such sources of natural gas, the USA in 2009 was a net gas importer. By 2014 it was the largest producer of natural gas in the world.

** This adds to its attractiveness in a system with high intermittent energy sources such as wind or solar energy.

†† Estimates vary but some estimates place the global warming potential between 86 and 105 times as powerful as carbon dioxide at disrupting climate change, over a twenty year period. Others estimate the effect close to 25 times. Whatever factors are used, leaked raw natural gas (methane) is a powerful greenhouse gas.

‡‡ Other forms of gas such as Liquefied Natural Gas (LNG), Compressed Natural Gas (CNG) or “town gas” (coal gasification) are also important and offer somewhat less concerns over security of supply as they can be sourced from multiple sources. It is interesting to note that of the 17.25 million CNG fuelled vehicles worldwide some 13.3 million are located in developing countries.

3.25. The hope that renewable energy (solar, wind, biomass, small hydro, wave etc.) will lead the energy transition remains high. Indeed, over the past twenty years the world has witnessed a revolution in the growth of renewable energy. Investment in renewable energy in 2012 was estimated at US \$244 billion,* a reduction of 12% compared with 2011 which witnessed the highest level of investment to date (US \$279 billion),⁶ and equivalent to 6.5% of total electricity produced globally. Investment is now larger in developing countries than in developed: a shift that started in 2010. It is noteworthy that investment in developed countries dropped by 29% in 2012, in part due to increased instability in regulatory and policy frameworks that began to grip the rich world.[†] However, a countervailing impact was that unit costs continued their downward trend: investors continue to get more energy per dollar invested than at any time over the past decade. Large scale PV system costs fell by around 40% and, although investment in solar declined by 11% globally, installed capacity increased by 6%. A similar story occurred in wind power. Renewable energy can be highly competitive in many applications, especially in distributive systems. However, in the developed world, it has relied on supportive pricing policies, largely through feed-in tariffs and in developing countries it has often relied on low interest funding. Press reports[‡] suggest a growing apprehension amongst some consumers that electricity prices are rising and may even affect competitiveness. The problem (along with nuclear and large scale hydro) is that these technologies are higher capital cost than alternatives even where their recurrent cost (fuel) is very low: our economic and financial systems with high discount rates tilt the balance of costs unfortunately as does the absence of a reasonable and plausible price for carbon avoided. An additional cost implication with many renewable energy sources is that their intermittent nature requires significant back up or standing reserve capacity. Bio-fuels and other forms of biomass are important in specific *in situ* locations but are unlikely to make a major dent in global energy supply. Bio-fuels have become controversial, in part because of large subsidies and in part because they are seen to crowd out valuable land that could be utilized for alternative crops (food). The truth is that bio-fuels are only likely to be economic (or close to economic) in very few locations globally.

Vintage Capital Stock Turnover

3.26. Energy investments are typically made for the long term. In the electricity sector hydro-electric facilities are built for many decades; thermal and nuclear power plants have life expectancy of thirty to forty years and other plants such as gas turbines perhaps twenty five years. There is, in fact, a rather large stock of invested capital in the energy sector that has dutifully fulfilled its operational expectations: it needs rehabilitating, replacing or decommissioning. Investment costs vary but they have important consequences as there are incremental costs associated with closure and for new replacement plants. While some costs can be offset by important energy efficiency gains overall the replacement of vintage capital stock represents an important financial drain on the energy sector.

* By comparison the investment levels in coal, oil and gas was estimated at US \$262 billion, higher than the total for renewable energy.

† This was not, however, universal: Japan witnessed an investment surge in solar energy. While countries in Europe witnessed a decline (including Germany where investment dropped by 35%. China now leads the world in investment in renewable energy).

‡ *The Economist* for example carried articles on Germany and the UK.

3.27. Nuclear energy, in particular, is in focus in this regard. There are around 435 nuclear reactors in the world today (with a combined capacity of 370 billion watts (GWe). Of these 138 are more than thirty years old and some 24 or so are over forty years old. While life extension is, of course, possible well beyond 40 years the pressure to upgrade or close and then decommission nuclear power plants is an important option in many countries.

3.28. While many nuclear plants have closed, the full costs of decommissioning are still rather vague. Estimates seem to vary between US \$500 million and US \$1 billion per plant reflecting the nature of the plants and the means by which decommissioning is planned.* In some cases where re-processing plants are also decommissioned with the power plants costs can be extremely high.† One consistent characteristic is that costs continue to spiral and are typically several fold greater than original estimates.

3.29. Investment funds will be needed at a very large scale over the next two decades as more and more nuclear plants move into their mature phase and require substantial life expectancy investment or closure and ultimately decommissioning. Few countries or utilities appear to have provisioned adequately for such costs and it is likely that some form of public budget support will be required.‡ It is not clear to what scale or extent of impact such funding will have on other energy sectors but the funding needs will clearly not be trivial.

3.30. The aging stock of hydro-electric facilities, more often than not performing below nominal rating, represents a major opportunity to increase energy production at relatively low-cost. Estimates for refurbishment, life extension and upgrading are significantly lower than new investment. This can help reduce operational costs and, in some cases, provide additional generation but requires new investment and capital expenditures. Nevertheless, adding capacity at existing hydropower schemes can cost as little as US \$500 per KW installed, a fraction of new plants.

3.31. Coal fired plants§ also offer large opportunities for upgrading, especially in dramatically improving their thermal efficiency and output. Many coal fired plants are coming to the end of their life. Driven by concerns over local pollution, rising costs of fuel and, in some countries, a commitment to reducing GHG emissions, many coal fired plants will be phased out over the next twenty years. These will need to be replaced by new generation, an additional investment cost to meet the same demand for energy. New technologies are under review to decrease emissions from existing plants. These include integrated gasification combined cycle (with the potential for 50% thermal efficiency), and conventional improvements using super critical boilers etc. It has been estimated that a 1% improvement to a conventional pulverized coal fired plant results in a 2% to 3% improvement in GHG emissions.¶ Despite the clear scope for rehabilitation and upgrading a sobering assessment by the IEA

* There are basically three approaches to decommissioning: (i) *Immediate dismantling* of all radioactive equipment; (ii) *safe enclosure* which requires the removal of spent fuel rods; and (iii) *entombment* of all spent fuels and then placed in safe concrete or glass vessels and stored in geologically safe spaces.

† For example, in Sellafield in the UK it has been estimated that the total cost of decommissioning will be over £70 billion. This includes not only decommissioning of the power plants but also costs associated with reprocessing of nuclear waste (including from sites in the UK other than Sellafield).

‡ It is understood that Sweden, for example, has a decommissioning tax on its electric tariffs (TBC)

§ There are over 2,300 coal fired stations globally (620 in China) producing around 40% of total electricity.

¶ World Coal Association estimates.

Clean Coal Centre* suggests that it will be still necessary to invest in Carbon Capture and Storage (CCS) if the current globally agreed emissions reduction is to be met and if, as seem likely, coal fired electricity generation will continue. Adding CCS to existing plants appears to be an expensive and, as yet, not totally proven technology. Either way it suggests new and additional capital investment will be needed.†

3.32. Transmission and distribution systems are also in need of major overhaul and upgrading, especially in emerging economies. As noted, reducing losses is of primary importance as is meeting existing demands through new investment. In some cases, especially long distance transmission, it may be economical to invest in high voltage DC lines. Such investments are high cost relative to more conventional AC lines but offer major energy savings. Financing distribution is likely to be an important challenge.

The Potential Importance of Path Dependency

3.33. Our energy systems and our energy utilization have been driven very largely by technological “lock in” or path dependency. For example, transportation systems may have locked us into fossil fuels with the potential to move to new low carbon pathways stymied by high cost.‡ The great danger in developing high cost non-conventional fossil fuels is that pathways may be perpetuated for many decades. Given the importance and urgency of moving to a low to no carbon world,§ the issue of carbon “lock in” is a major concern and could result in either uneconomic investment or a significant problem of stranded assets.

3.34. Another, somewhat obscure form of “lock in”, relates to the planned increase in nuclear power investment. In the past, as developed countries embarked upon a nuclear power expansion program they also opened up the possibility of below market non-fungible finance for other countries. Many nuclear power facilities in emerging economies have been funded, in part, through accession to export credit and other forms of subsidized credit.¶

The Impact on Investment Needs

3.35. A perfect financial storm is approaching the global energy sector. It is driven by the factors noted above: the need to meet the rising demand for clean energy, the rising costs of securing conventional energy, the need to replace and upgrade vintage stock and the potential repercussions of unintended path dependency concerns.

3.36. While a great deal of investment throughout the world is likely to be required to

* John Topper, Managing Director, IEA Clean Coal Centre.

† This is added to the problem that worldwide we are adding coal fired generation at a rate faster than we are mothballing existing vintage plants. Between 2010 and 2012 some 89 GW of new coal capacity was added. See technical paper prepared by Steven J. Davis and Robert H. Socolow, University of California, Irvine, 2014

‡ The two are, of course, synergistic, initially cheap fossil fuels locked in transportation systems. Today, it may be that long term investment in transportation systems (especially roads) will lock in future fossil fuel requirements and continue the drive up the long run marginal cost ladder.

§ A political consensus (although by no means a scientific consensus) seems to have emerged that stabilizing eventual temperature change (relative to pre-industrial levels) at 2°C is required to avoid major social and economic disruption. This, in turn, requires a stabilization goal of around 450 ppm of CO₂e. An ambitious target when we are currently at about 400 ppm and the evidence of investment lock in the coal sector for example would suggest that the 450 ppm is, at best, overly ambitious.

¶ The author is reminded of a personal conversation with a colleague from the French nuclear energy industry who claimed that for France to maintain its nuclear energy infrastructure it is required to build a plant every five years. As domestic demand slowed the main alternative was to provide non-fungible finance to other countries to adopt French know-how and technology.

upgrade existing capital stock, the new investment required to meet growing demands will almost all come from the developing world, regions where financial constraints are greater and access to long term financial capital is least favorable.

3.37. Least-cost analysis would suggest that investment and technology choice be dictated by the combined discounted economic cost stream of capital and fuel costs. We are entering a period when the more promising low carbon technologies – renewable energy, hydro-electric power and nuclear – are capital intensive but rely on low cost (or no cost in the case of solar and wind) recurrent costs. While this is often perceived as an advantage it does require a front loading of finance for future energy systems. It also requires deeper consideration of both economic analysis (including externalities such as climate change) and of discount rates used in project evaluation.*

3.38. One important potential advantage however is that for some no and low carbon technologies (especially new and renewable energy investment) economies of scale are of significantly less importance. Decentralized systems are beginning to compete with larger systems in terms of unit costs. This may be an advantage in terms of how finance can be sought at local levels and by communities and even individual households. In particular, this could be an offsetting cost to the high cost integrated electricity networks at the distribution level.

3.39. Yet the bottom line remains: Financing the energy transition while meeting the aspirations of those currently underserved with clean energy is a major challenge. Few integrated estimates exist of the total financing challenges but perhaps the most comprehensive is that of the International Energy Agency (IEA) which has compiled data and estimates through to 2035.⁷ The IEA estimates that through the period 2035 some US \$48 trillion will be required in investment. It notes that the current investment levels of around US \$1.6 trillion will need to rise to over US \$2 trillion per annum.[†] In particular, according to IEA, investment in energy efficiency will need to rise from US \$130 billion per annum to more than US \$550 billion by 2035 (2012 prices). It notes that the majority of investment today is in fossil fuels and anticipates a major rebalancing with other sources of fuel increasing. Nevertheless, of the US \$48 trillion around US \$40 trillion is for increased supply and the balance for energy efficiency. In regard to the estimated investment in energy supply a staggering US \$23 trillion is in fossil fuel extraction, refining and transportation and US \$10 trillion in electric power generation including renewable energy (US \$6 trillion) and nuclear energy (US \$1 trillion).

3.40. By its own admission the IEA’s analysis is what can be expected given current trends and shifting paradigms of energy investment. However the expected investment pattern

“Financing the energy transition while meeting the aspirations of those currently underserved with clean energy is a major challenge.”

* An example illustrates this amply. The “levelized” costs of say a hydropower plant costing US \$3,000 per KW over a lifetime of 80 years are US cents per KWh cents 4.4 (at a discount rate of 3%); Kwh 7.3 cents (at a discount rate of 7%) and KWh 9.5 cents (at a discount rate of 10%).

† In the author’s view this is likely to be a very conservative estimate for capital investment in the energy sector. The reasons for assuming a higher figure are laid out in this note and include primarily the additional costs for securing a global GHG emissions target and the need to replace at high cost vintage stock.

reported by IEA falls well short of reaching agreed climate stabilization goals. Neither market signals nor government resolve currently appears strong enough to suggest a more dramatic strategy. Delays in reaching such an agreement simply increase the costs that will eventually have to be incurred. Furthermore, the costs of nuclear decommissioning may be understated, as reported costs are often well below actual costs. The likelihood is that to meet the goal of modern clean energy available to all and simultaneously meet the climate stabilization goal will require an even larger investment strategy. Even the doubling of energy investment in no carbon and high efficiency may be insufficient. Quite what the correct overall number should be is perhaps impossible to say as feedback loops on GDP growth, changing costs in technology, and uncertain policy environments must be taken into account. What we do know is that financing the growth and transition of the global energy sector represents a major challenge: it is a very big deal.

“What is clear is that any attempt to transform the energy sector into a sector charged with delivering energy efficiently in a manner that ensures it is, in turn, consumed efficiently must start with a re-calibration of pricing policy problem.”

4. The Financing of the Energy Transition

4.1. There are many challenges to financing the energy transition and meeting future demand. For cash-strapped developing countries the search for long term capital at the scale required is particularly onerous. Many developing countries also find it a challenge to mobilize domestic (local) funds to meet local costs, especially in the distribution of electricity.

4.2. During the 1990s the wave of free market euphoria failed to bypass the energy and electricity sector. Markets, free and under-regulated, were expected to drive private investment into the energy sector both at an unprecedented scale and with optimal results. Nothing could be further from the truth. Electric utilities* were expected to practice full cost recovery in order to reduce external subsidies and to ensure full and healthy financial viability. This proved, in almost all countries, to be elusive. Despite the adherence to a free market philosophy that should have abhorred subsidies, they grew, sometimes at alarming rates. In many emerging countries it was estimated that electricity tariffs would need to rise by between twofold and tenfold⁸ in order that consumers would pay close to the full costs of supply: a political impossibility. However, developing countries were not alone in suffering from distorted pricing and subsidy policies: subsidies to the nuclear industry and for renewable energy were also prevalent.

4.3. What is clear is that any attempt to transform the energy sector into a sector charged with delivering energy efficiently in a manner that ensures it is, in turn, consumed efficiently must start with a re-calibration of pricing policy. Broad-based subsidies are rarely the best

* A similar hope was that water utilities would follow a similar path. Water subsidies may be as large as energy subsidies and sub-optimal investment and operating practices remain widespread in the water sector.

way of achieving selective goals (poverty reduction, technology stimulation etc.). However, it is equally clear that the immediate dismantling of energy subsidies has little chance of winning favor in political circles. What is needed is a smart “energy” pricing policy that is comprehensive, reduces major distortions and negative impacts, and is introduced in a sequential, prudent manner to allow political acceptance and time for adjustment. The design of such policies is beyond the scope of this note but it is clear that a goal of reaching *first*, the elimination of the financial subsidy followed *secondly*, by the elimination of the economic subsidy (especially through the inclusion of a price for carbon), should be a matter of priority for all countries: ideally a global debate and acceptance of such measures would also reduce the highly sensitive issue of competitiveness: an emerging sore point in the renewable energy debate.* Full economic pricing would have the triple advantages of reducing overall energy demand and energy capital demand; encouraging economic fuel switching; and providing significant domestic finance to cover costs and contribute to expansion programs.

“It is clear that we have a financial sector out of control, divorced from the real economy and incapable of providing the liquidity at the scale needed to address key sectors of the real economy.”

4.4. Improved pricing regimes could also pave the way for promoting another key element in financing the energy transition: the need to ensure that investment plans are based on least economic cost. As noted earlier, a major element of the economic subsidy is that poor investment choice and sub-optimal decision making on technology choice increases costs. The corollary of the free market spirit of the 1990s was that careful energy system planning was thrown out of the window and in came project by project analysis, simplistic independent cost curves (with no added systems costs for reserve margins), and poor technical options. In the electric power sector there is likely little doubt that sub-optimal investment strategies were implemented in many countries of the world. A return to system planning, especially in the electric power sector should be encouraged: it could lower reserve margins, encourage synergy between technologies and reduce capacity costs for meeting peak demand.† A new development in advocating for a clear carbon price is gathering support. Led by the World Bank it now has a number of countries supporting a price for carbon to be used in investment and policy decisions. A global carbon tax would not only facilitate revenue but would also shift investment behavior and appetite towards no carbon technologies: it would help level the pricing playing field. Furthermore it would facilitate the promotion of a new generation of carbon markets, of which the majority of finance would be for the energy sector. Just how high such a tax should be is a matter for debate: views on the range are considerable.

* *The Economist* magazine recently reported on the concerns of German consumers and German industry where the claim is that feed in tariffs and renewable energy targets have made German electricity an issue of global competitiveness. The claim is that German electricity prices are now double those of the USA.

† For example, system reserve margins (for planned and unplanned outages) can be lowered for the total system. Optimizing the mix of technologies and fuel use can result in considerable recurrent cost savings.

4.5. But even if full economic pricing could be realized and even if improved system planning reduced the overall demand for local and foreign funds, new finance will be required. Better pricing and investment decisions would likely shave off several percentage points of investment requirement but the balance finance is still large and looming. The pious hope that markets and private capital would do it all now needs to be replaced by a healthy sense of pragmatism. Moving the world towards an efficient and effective global energy sector will result in both private and public gains: Energy is both a private good and a public good. As climate change concerns escalate, the energy sector has emerged as the primary carrier of the most important global public good of our era, climate change.

4.6. A new wave of financial innovation is required, especially in the mobilization of private capital. But a start must be made in reforming the financial sector from where such resources must be drawn. A discussion on the current financial sector is beyond the scope of this note* yet it is clear that we have a financial sector out of control, divorced from the real economy and incapable of providing the liquidity at the scale needed to address key sectors of the real economy. Furthermore, as some of the investments required produce only public good benefits (e.g. nuclear decommissioning, R and D in renewable energy) and as the bulk of new investment is in low income (and perceived riskier countries) the ability of turning financial markets to address the scale of the investment will require enlightened public policy and potentially new partnership arrangements.

4.7. While equity will play a role, especially in smaller scale energy markets and technologies the bulk of new funding for large scale investments will need to be provided through long term debt instruments.† Raising funds through debt markets requires either direct lending through a variety of sources or creating long-term debt through the bond market. For many developing countries Foreign Direct Investment (FDI) has dried up and international finance institutions' funding remains a relatively small source of total finance.

4.8. Dedicated climate finance has also facilitated investment especially in the small scale renewable energy sub-sectors. The Kyoto Protocol's Clean Development Mechanism (CDM); the Global Environment Facility (GEF); and dedicated bilateral climate funds have played an important role in renewable energy development and in pioneering new no carbon energy technologies (such as methane capture, biomass etc.) and building knowledge in developing countries. The newly created Green Fund will also play a role in the future, although it has yet to disburse substantial funds.‡

* However see article, Crises and Opportunities: A Manifesto for Change by Ian Johnson and Garry Jacobs in *Cadmus* (the journal of the World Academy of Art and Science (WAAS)) which outlines some of the main challenges facing the financial sector. <http://cadmusjournal.org/article/issue-5/crises-and-opportunities-manifesto-change>

† Bloomberg notes that both solar and wind were the main recipients of equity capital, although even in these two subsectors 2012 witnessed a modest decline. Equity interest in bio-fuels and biomass witnessed a major reduction, by 63% and 33% respectively, suggesting that investor appetite in these two sub-sectors may be waning.

‡ There are a myriad of specialized climate funds dedicated to both mitigation and adaptation. Despite their rapid growth they remain relatively modest. The World Bank's carbon funds have been in existence for about a decade and have provided funding of around US \$4 billion. In 2010, Governments made a pledge to provide by 2020 US \$100 billion per annum (drawn from public and private sources) and to put in place a "fast track" funding of US \$30 billion. These funds are not dedicated solely for the energy sector but some part will likely be used to fund energy efficiency schemes, renewable energy and hydro-electric projects.

4.9. Long term institutional investors such as pension funds are a potential major financier.* However, given that the bulk of investment needs is in emerging economies, with higher than average perceived risk, the potential for scaling up these funding sources has yet to be realized.

4.10. In a similar vein, the newly emerged sovereign wealth funds offer enormous potential also. Sovereign wealth funds have grown appreciably over the last two decades. Many come from the exploitation of natural resources (mainly from oil revenues) and are under the guardianship of governments. In many respects these should be ideally positioned to finance a major expansion of the energy transition. In total some US \$20 trillion of funds were under sovereign wealth management.†

4.11. Unlocking institutional and sovereign wealth funds for the energy transition and at a commensurate scale represents a major challenge. The fact that these funds are under public management may make them more amenable to taking a longer term view of investment and to incorporating new public good standards related to climate change. In time, institutional capital could be motivated to become a major financier of the energy transition.

4.12. The fixed income bond market is currently estimated to have assets of around US \$80 trillion. Over the past few years an attempt has been made to earmark some of these bonds to focus on climate change and other environmental investments. The rise in “Green Bonds” over the past five years has been remarkable. This year has been a record year for the issuance of green bonds: a record US \$16.6 billion has been issued with the expectation that by the year’s end some US \$40 billion will have been issued, triple that of 2013.‡ Of course this is a small fraction (less than 1%) of the total global bond market but it nevertheless represents an important funding source. Many for these bonds focus on clean energy or on specific sub-sectors such as wind, solar etc. Green bonds are provided from private capital,‡ government backed bonds, and multilateral banks.§ A forward looking carbon price together with clear rules and accountabilities related to use of funds could encourage new entrants into the green bond market. Given the public good nature of climate change some public private partnership finance could also be warranted.

“Clean energy is not just about turning on a light switch; it is an integral element of a changed lifestyle and a changed ethos.”

5. Conclusion

5.1. The urgent challenge of accelerating a major global energy transition is daunting.

* For example the USA and Canadian pension funds have been active financiers of long-term investment in natural gas and natural gas infrastructure. See also report by the World Pensions Council (WPC).

† This included US \$5.78 trillion (directly in sovereign wealth funds); US \$7.20 trillion (in pension reserve funds); and US \$8.1 trillion (in foreign exchange reserve funds).

‡ Bloomberg notes that while “bonds issued by corporations with proceeds ring fenced to green investments their repayments are from general corporate funds. Issuers have not been able to realise pricing advantages through green labelling as investors are unwilling to take lower than expected coupons simply for the ability to “go green”. This is an important finding as it places pressure on project developers to deliver quality investments.

§ The World Bank Group and IFC have, since 2008, issued bonds valued at US \$10 billion.

Providing clean and modern energy to all requires complex policy choices and difficult financing decisions. The energy sector is perhaps the most pivotal in the fight against climate change. Clean energy is not just about turning on a light switch; it is an integral element of a changed lifestyle and a changed ethos. The changes needed revolve around difficult technical, pricing and financing choices. Yet the direction of change is obvious if we want to meet the twin objectives of moving to an energy-poverty free world and a world that manages within the safe limits of anthropogenic climate change: essentially a world of carbon free energy and energy access for all.

5.2. A start must be made on pricing the planet's scarce energy resources in line with their real values and resource cost. We need to eliminate financial subsidies and then impose a carbon tax. This need not occur overnight; it can be phased in over a period and protective measures for those negatively affected can be easily designed: indeed unraveling the network of subsidies and designing a new level-pricing "playing field" requires careful assessment as relative prices between energy sources are as important as absolute prices. Energy subsidies are not free gifts as they simply transfer funds from one part of the economy to another. They are often the least efficient means to meet social objectives. In a similar manner a carbon tax should not be viewed as yet another punitive revenue earning tax but rather a means to price the negative externality of climate change. This requires communications skills: an unholy alliance between economists and communications specialists.

5.3. Funding needs are large. The IEA estimates, which are, in the author's view too low, of US \$2 trillion per annum are already eye watering and yet even this level of investment is insufficient to meet climate goals of a 2°C stabilization and price contingencies on such investments as nuclear power plant decommissioning or cost over-runs of large scale energy investments have not been factored in. The reality is that significantly more than US \$2 trillion per annum will be required. This suggests that the following actions are central to energy policy reform:

- Major investment is required in energy demand management both to conserve energy and to reduce capital expenditures. Attention is required, in the electricity sector, to reducing and managing peak demand in order to reduce capital expenditures. Such actions represent the highest economic and financial return to the energy sector. In particular attention should be paid to off-peak no-carbon activities such as domestic and commercial heating and cooling and potentially electric automobiles.*
- Energy subsidies, as noted, must be addressed as a matter of great urgency. They not only drain the sector of critical funds but also induce highly sub-optimal investment and energy use. Attention is not only needed to reduce financial subsidies but also to address economic subsidies, in particular, setting a price for carbon: a price that will clearly induce inter-fuel substitution towards non-carbon investment. There is a great deal of confusion and a wide range of metrics surrounding energy subsidies, especially how

* The growth in electric automobiles could be a "life saver" for the electric utilities industry as it would allow for off-peak (over-night) charging at a large scale. It must be recalled that energy saving in the electric sector is the environmentalist's dream but the accountant's nightmare! For every KWh saved is one unit less of revenue.

to account for economic subsidies and subsidies to capital investment. An important policy dialogue is needed on the basis of a clear understanding of the flows, drivers and consequences of the wide array of subsidies provided to the sector.

- Efforts must be turned towards least-cost economic planning in the energy sector to ensure that synergies between and within investments are made. This is not a call to return to top-down centralized planning but rather a call to recognize that the energy sector is more efficient when it operates as a system rather than when it operates as a set of discrete and independent projects. Good planning can pave the way for good investment and improved operational management.
- Least cost energy expansion programs that build in climate concerns are likely to lead to higher capital cost but lower recurrent cost expenditures. Accounting and economic rules that require highly positive discount rates or inappropriate depreciation rules need to be adjusted. Such investments, with the possible exception of nuclear power, reduce long-term risk by sourcing a secure and low cost energy supply.
- High priority should be given to upgrading, life extension and efficiency improvements in the production of electricity, especially in the hydro and thermal power sector.
- Informed public debate on technology choice, real costs and next generation decisions is needed. Today the debate is obfuscated by misunderstanding of real resource costs and needs to take place if there is to be a consensus about moving towards a non-carbon energy world. In particular, the current debate on “fracking” and new and non-conventional oil and gas sources offers an opportunity to graft on a broader debate around the real costs and risks of future choices. An increased understanding of the efficacy and costs of carbon capture and storage is needed as this may also be an area that requires considerable increase in funding.
- Assistance will be needed at the level of distribution (especially of electricity) to seek out low cost options and where local funding constraints are a major impediment.

5.4. The financial sector needs urgent reform. It needs to become closer to the real economy and provide the requisite finance. It needs a major retrofit to be made fit for purpose: providing much needed liquidity for the global transition (on energy and other forms of infrastructure). Long term finance is required; new metrics are needed and internal money transfers by way of speculation and non-productive investment must be mitigated. There is a strong role for public policy to set out new rules of the game for the financial and banking sector and for investment in long-term assets that have high upfront costs.

5.5. The rich world must step up to the plate by offering inducements to crowd in private and quasi-public institutional capital. In this regard sovereign wealth funds may have a critical role to play. However, to do so will require enlightened public policy and clear standards, metrics, independent rating of assets etc. The public sector can also play a major role in reviving the carbon market, either through a reformed Clean Development Mechanism (CDM) or by other means. Developing a sufficiently large carbon price would offer a major inducement

to expanding the carbon market* and providing much needed liquidity to small and medium-sized firms operating in the energy efficiency and renewable energy space.

5.6. The public sector will also need to play a role in securing the public good benefits of future investment. With regard to the large and ever increasing cost of decommissioning the stock of vintage nuclear facilities it is likely that special purpose funding instruments will be needed. Such funds are likely to be special purpose public funds and not conflated with energy investment *per se*.[†]

5.7. The international financial system needs to be expanded to provide funding to least developed countries. The current level of finance provided, whether through lending or through special purpose climate and clean energy funds is too low. Governments must immediately meet their obligations of funding climate change at a level of US \$100 billion per annum and demonstrate unambiguous and significant progress towards that goal.

5.8. Efforts to sequester part of the bond market and drive it towards clean energy are welcome and should be intensified. This again will likely require some level of public support. International Financial Institutions (IFI) bond issuance should also be supported and expanded. There appears to be no reason why bond markets (with an appropriate public support system) could not be expanded exponentially to facilitate clean energy investment.

5.9. The above actions, *prima facie*, appear almost un-surmountable. They are not. What is required is careful and prudent analysis as the basis for sound public policymaking. The rich world has a special responsibility to lead: while it has vintage stock issues to deal with and a heavy nuclear power legacy to fund, it also has the luxury of low growth energy demand and high income. It must take the lead in setting a fair carbon price, in meeting its “differentiated obligations” under the climate treaty, and it must increase the volume of funding and non-funding assistance to the energy economies of the developing world where over 80% of total investment will be directed.

5.10. Difficult financing decisions will no doubt need to be taken to meet both legitimate energy needs and to de-carbonize the sector. The energy transition will take time to complete, perhaps several decades. In the meantime urgent actions will be required to meet the challenges of climate change.[‡] Land management and attention to the forestry sector can offer low cost opportunities to sequester large amounts of carbon at relatively low cost and, in doing so, buy strategic time for the energy transition to be completed. A “30 year land wedge” geared towards carbon sequestration could offer opportunities to provide the space for that transition.

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* Other factors include a stable regulatory regime for carbon markets including potentially a price stabilization scheme. At the present time many independent carbon market schemes are in existence: a degree of rationalization would likely induce an expansion in this market.

† Other factors related to safety, security and military concerns will also be factored in.

‡ This note has not focused on climate change *per se* but only as it affects the technical and policy choices affecting the energy sector. A more comprehensive view of actions for mitigating and adapting to climate change is beyond the scope of this note.

Notes

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2. Doug Koplow, "Nuclear Power: Still not viable without subsidies," *Union of Concerned Scientists* http://www.ucsusa.org/sites/default/files/legacy/assets/documents/nuclear_power/nuclear_subsidies_report.pdf
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The New Paradigm of Social Evolution: Modern Society between Hope and Tragedy

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Abstract

Social evolution is a continuation of biological evolution. The difference is the presence of mind, language and thinking. Therefore, society can be viewed as a living and rational system. The engine of social evolution is knowledge. Development of society is determined bilaterally by objective and subjective factors. Objective factors determine the form of society, subjective – the content. Society has three subsystems: social consciousness, economics and governance. The changes which take place in society are quantitative (evolutionary) and qualitative (revolutionary). The spiral of social evolution begins with a cultural revolution that consistently changes economic relations and the organization of society, leading to the emergence of civilization. Declining civilization is a prerequisite for the emergence of a new cultural revolution. From this point of view humanity today faces dramatic changes – the emergence of social self-consciousness and transition from a hierarchical social structure to a horizontal organization. The New World Order advocated by power and the financial elite is impossible to implement because it contradicts the principles of social evolution.

Throughout human history, social evolution has been a theory of qualitative changes in social structure, aiming to discover the fundamental laws of the origin and development of humanity as a whole. Social evolution complements several basic research fields in human sciences like history, cultural evolution, anthropology, philosophy of history, social and developmental psychology, etc. The process of social evolution is very complicated and controversial. During the last two centuries, a dozen approaches, theories, concepts and paradigms have been trying to describe and explain how society works and evolves. Modern theories provide models clarifying the relationship between social structure, economy, technology, social values, etc. Nevertheless, social evolution remains obscure, because we still do not know the laws and mechanics which determine social development.

1. Problem Stated

Perhaps the most influential social theory today is “economic determinism”. It is largely accepted as “an undisputed law of history”. It attributes primacy of economy over politics in the progress of human history. The law of economic determinism is clear-cut: self-preservation or the pursuit of food, clothing and shelter is the supreme instinct in man. Understandably, because food, clothing and shelter are commodities, which could be bought or sold in society; the pursuit of these commodities is an economic activity. Therefore, according

to this theory, *economic laws determine the course of history*. Economic determinism is usually associated with Marxism, but it is an important part of many social concepts going far beyond historical materialism. This is so because economic determinism is an outcome of capitalism as a socioeconomic formation, which influenced theoretical thought to a great extent during the last two centuries.

No doubt, the economy or organised pursuit of food, clothing and shelter is of paramount importance for the well-being of humanity. Yet, self-preservation, the pursuit of food and shelter is characteristic of the entire animal kingdom. Therefore, there should be something specific, which distinguishes the animal kingdom from *Homo sapiens*. This is the *consciousness, reason and knowledge*, which appear to play a key role in the process of the evolution of humanity. The economy is a product of these factors and cannot be accepted as a primary factor, as the cause. Not everything that looks obvious is right. For instance, the Sun looks like it is orbiting the Earth, but the opposite is the truth. To comprehend social evolution, it is necessary to find its “centre” or the real driving force.

“Knowledge is the real driving force of social evolution, and the economy, culture and governance “orbiting” around it.”

There are good reasons to accept *ever-expanding knowledge as the driving engine of social evolution*. Knowledge is conscious information. If biological evolution is based on genes, which are units of information, social evolution is based on memes, or units of knowledge. Thus, if genetics is the science of biological evolution, memetics should be the science of social evolution. In fact, social evolution is a process of gathering and the verification of knowledge. Therefore, *knowledge is the real driving force of social evolution, and the economy, culture and governance “orbiting” around it*.

Changing the point of view from the Earth to the Sun as the centre of the planetary system makes a dramatic shift in our understanding of celestial mechanics and the Universe. In a similar way, accepting knowledge as a driving engine of social evolution reveals a completely different picture of how society works, evolves, what is going on now and what future society will look like, compared with today’s broadly accepted economic determinism.

2. Mechanics of Social Evolution

Social evolution is based on three principles:

2.1. Interaction between Objective and Subjective Factors

Humanity is a self-organising system, as with all-living systems. On the other hand, *humanity is not only a living system; it is also a rational system*. Because of this duality, social evolution is the outcome of two different factors: a) human reason and b) more fundamental laws of self-organisation, intrinsic to living systems. This is something like a “double helix”, which determines living and rational systems. Accumulation of knowledge makes society more complex. Raised complexity requires a new social structure. “Separation of labour” between subjective and objective factors is simple. Human reason gathers

information, and processes and verifies knowledge, making milliard small quantitative changes in society. This process is known as *culture*. The living part of the system makes rare but very significant qualitative leaps to new stages of development, destroying the existing, obsolete social structure and creating a new one, adequate for the achieved complexity. This is a form of objective self-organisation. These two lines or, to be precise, two stages of development, could be defined as the course of history and helices of social evolution. They cannot be separated ontologically, but epistemologically, they should be differentiated clearly.

“Social problems appear as contradictions. Eventually, the development of society is a result of resolving contradictions.”

The “separation of labour” between subjective and objective factors, or course of history and helices of social evolution, is the first law of social evolution.

According to this principle, *accumulating knowledge, human reason or subjective factors makes quantitative changes, raising the complexity of society; periodically, objective factors or the living part of the system make qualitative leaps from an existing to a new, higher social structure, adequate for the complexity already achieved.*

2.2. Dialectics among Culture, Economy and Governance

As a rational system, society is composed of three equally important sub-systems: social consciousness (or culture), economy and decision-making mechanism (or form of governance). Social evolution is the result of the development and interaction of these three basic sub-systems. Following the described mechanism briefly, all the sub-systems – social consciousness (culture), economy and decision-making mechanism – evolve as well. Throughout history, social consciousness evolved from mythological to religious (polytheism and monotheism) up to today’s dominant political social consciousness. Economy evolved from primitive horticulture to agriculture, advanced agriculture to today’s dominant industrial society. Accordingly, the decision-making mechanism evolved from autocracy, based on individual intelligence, to democracy, based on collective intelligence.

In fact, after the Industrial Revolution, society became so complex that today, it is impossible to be ruled by individual intelligence. Society needed a new, more sophisticated decision-making mechanism in comparison with autocracy. Understandably, at certain times, monarchies were swept out and democracy, which is based on *collective intelligence*, spread across the world very rapidly.

Interactions among sub-systems in a process of qualitative changes are very important and should be comprehended clearly. The new helix of evolution starts with a cultural revolution, which replaces the domination of one form of social consciousness with a form that is higher, more sophisticated and adequate for new realities. The new culture initiates new economic relations. A new economy raises its complexity and eventually replaces the existing form of government with a new one. *This “chain reaction” of qualitative changes in culture, the economy and governance is the second principle of social evolution.*

2.3. Moving Forces of Social Evolution – Global and Fundamental Contradictions

Gathering, processing and verifying knowledge is a mode for solving problems. Social problems appear as contradictions. Eventually, the development of society is a result of resolving contradictions. Hence, the contradictions are the driving forces of social evolution. An evolving society resolves milliard contradictions.

“Now, after 10,000 years of social evolution of hierarchically organised agrarian and industrial societies, it is time for a new reorganisation of humanity from a hierarchical to a horizontal social structure.”

From the point of view of social evolution, contradictions at the system and sub-system levels are especially important, because they *describe the line of social development at any particular moment*. The contradictions at the system level are fundamental; the contradictions reflecting the status and dynamics of sub-stems could be defined as global.

The fundamental contradiction of society is one, which plays the decisive role in social development, ending inevitably with the emergence of a new helix of social evolution. The fundamental contradiction is on a system level. Moreover, it should be considered as part of the objective course of social evolution, which cannot be influenced subjectively. *The fundamental contradiction of modern society is the contradiction between the current hierarchical social structure and the achieved level of social complexity, which requires a horizontal organisation of society.*

Hierarchy is typical of simple agrarian societies. Rational systems like religious and military organisations, political parties, etc. are also organised hierarchically because of the simplicity and efficiency, which this structure brings in the decision-making process, implementation of decisions and law enforcement. In hierarchical structures, the lower structural level is controlled by the higher structural level. Gathering experience and knowledge, society becomes more complicated and more complex, and the hierarchical type of organisation becomes insufficient and obsolete. It seems that all natural and artificially created complex systems – like the cosmos, railway networks, the Internet – are organized *horizontally*. The rising complexity of society gradually makes hierarchical organisation ineffective and even impossible. The human brain is Mother Nature’s solution for complexity and *it is organised horizontally*. The globalised world is a very complex system, comparable only to the complexity of the human brain, and it should be organised in a similar way. Yet, for historical reasons humanity remains hierarchically organised.

The metaphor of “society as a single organism” represents the process of integration of around 200 hierarchically organised nations into a “living organism”. Hence, *the fundamental contradiction of modern society is between the existing hierarchical social structure*

and the achieved complexity of society, which requires a horizontal organisation of society. This is a most dramatic clash between subjective and objective factors in modern society today. Now, after 10,000 years of social evolution of hierarchically organised agrarian and industrial societies, it is time for a new reorganisation of humanity from a hierarchical to a horizontal social structure.

According to Marx, the basic contradiction of capitalism is the contradiction between the social nature of production and its private appropriation. From this standpoint – knowledge as the driving engine of social evolution – this contradiction reflects only the capitalist economy as a sub-system; therefore, it is a global contradiction. Similar contradictions could be pointed out for other sub-systems and sub-sub-systems. For social consciousness, this is the contradiction *between the concentration of financial capital and the destruction of morality*; for the decision-making mechanism – *the contradiction between achieving complexity of society and the existing decision-making mechanism*. The global contradictions are different aspects of fundamental contradictions.

The first and second principles of social evolution are ontological; the third principle is epistemological by nature. Getting all three principles unified, the global and fundamental contradictions outline the dynamics and direction of ongoing social processes at the sub-system and system levels i.e. the dialectics of social evolution and dialectical logic of its analysis and understanding.

So, economic determinism could explain phenomena relating strictly to the economy such as competition, unemployment, class struggles and so forth, but accepted as “an undisputed law of history”; it creates theories and social myths like the dictatorship of the proletariat, the working class as the gravediggers of capitalism, etc. shaped during the past two centuries. Human sciences such as economics, history, anthropology etc. study the facts i.e. quantitative changes caused by human reason in the course of history. To be precise, they study society as a rational system. The theory of social evolution speculates about the second line – helices of evolution or qualitative leaps caused by self-regulation of living systems. This process of self-regulation periodically makes qualitative changes such as the Agrarian Revolution 10000 years ago, many cultural revolutions, industrial, scientific and technological revolutions. Ever-expanding knowledge brought capitalism to life as a socioeconomic and political formation and in the foreseeable future, will replace this formation with a new one.

3. Social Evolution in Action

3.1. Recent History

During the twentieth century, the knowledge accumulated throughout history made humanity a very complex system. It reached the stage of development characterised by the dominance of political social consciousness, an industry-based economy and the worldwide spread of democracy. At this stage, in violation of the above mentioned principles of social evolution, three engineering projects emerged and have been partially implemented – Communism, National Socialism (Fascism) and Financism (Wall Street capitalism). All three

projects are the result of misunderstanding social evolution i.e. they are a product of confusing the course of history with the helices of social evolution. All three projects *are the attempts of groups of people to create a pre-designed model of social structure, implementing qualitative changes, which is the exclusive prerogative of social evolution, therefore impossible.*

Communism was an attempt to create an equal society. It is an artificially constructed social structure. It was implemented by a political party (collective intelligence) throughout the bloody revolution and recently collapsed due to the inability to self-organise. National Socialism was also created by a political party based on the idea of national and racial superiority. It triggered the bloody war and ended infamously as all artificial creations did. Financism was created by international bankers and power elites, gradually replacing political power with the power of money. This is a truly profound, peaceful and a creeping revolution, replacing the objectively formed, and self-regulating capitalism with a subjective, artificial and manageable construction through free market and democracy. It is an unelected decision-making mechanism, controlling officially elected governments around the world by using financial mechanisms. Financism is a form of malignant cancer, destroying productive capitalism and pretending to be a “higher form” of capitalism.

Capitalism today is in a state of awakened coma. It cannot be revitalised and does not need to be. The power elite killed capitalism by eliminating its self-regulating mechanisms – free market and democracy. It replaced the free market with a non-regulated economy, which is a completely different story. It also turned democracy from a self-regulating decision-making mechanism into a manageable political show. Financism is another matter; it will collapse and disappear infamously like communism and fascism. When this happens, capitalism will pass away peacefully, as Feudalism did two centuries ago; eliminated by the Enlightenment and Industrial Revolution.

3.2. What is going on now?

Accepting knowledge as the driving engine of social evolution and following the dialectics between the course of history and helices of social evolution, we can expect two types of change forced by self-organisation of society and provoked by human reason.

3.3. Qualitative Changes caused by Objective Factors

3.3.1. Changes in Sub-systems of Society

The most important process today is the ongoing cultural revolution. Social consciousness is in a transition from the domination of its political form to the emergence of *social self-consciousness*. The emerging social self-consciousness is comparable with the emergence of self-consciousness in individual development during adolescence. They are both the result of expanding knowledge regarding the surrounding environment and concentration on the subject (person or society) itself. If there is an isomorphism between onto- and phylogenesis,

“Capitalism today is in a state of awakened coma. It cannot be revitalised and does not need to be.”

as scientists believe, then society today is at the stage of transition from “puberty” to maturity. This is a truly dramatic change, with many other transformations to come.

The economy is in a permanent crisis caused by Financism and in a process of transition from an industrial to an ecological form, or from a money-based to knowledge-based economy.

The decision-making mechanism is in the process of the downfall of democracy caused by destructive Financism and the pursuit of a new, more adequate form of governance.

3.3.2. The Clash between Religious and Political Ideologies

Humanity today is divided by different levels of development of social consciousness. During the last few centuries, the so-called West passed through significant qualitative changes – the Renaissance, Reformation and Enlightenment, which are three stages of the cultural revolution, replacing the religious consciousness dominant at the time with the domination of political social consciousness. Yet, the Middle East is not influenced by this cultural revolution and is still dominated by religious social consciousness. Because of this reason, today there is a clear clash between people dreaming of a world caliphate and those intending to create a New World Order. The irony of history is that the aspirations of both ideologies are doomed, because the first one is obsolete and the second one was artificially created, like the mentioned Communism, Fascism and Financism. At the end of the day, both ideologies will converge in the emerging social self-consciousness.

3.3.3. Globalisation and Differentiation of Society

Perhaps the most significant qualitative change today is globalisation. Globalisation is a natural process of integration of societies, of tribes into nations and today, of these nations into a “single organism”. Globalisation is a controversial process accompanied with differentiation on the regional and community levels, which resemble the functions of organs and systems in the human body. In this way, through differentiation, humanity tends to self-organise itself as a horizontal social structure.

3.4. Quantitative Changes caused by the Mindset of the Power Elite

These changes are nowadays gravely destructive geopolitics, aspirations for domination, attempts to create a world government or New World Order, terrorism, debt-based financial systems, destruction of morality and so forth.

3.4.1. Financism, World Government, New World Order and Globalism

So far, the power elite have succeeded in transforming the objectively created capitalism, self-regulating through the free market and democracy, into a controllable, artificially pre-designed socioeconomic system and manageable democracy. The ongoing attempt is to create a world government or New World Order. Establishing international organisations like the United Nations, World Bank, IMF, Trilateral Commission, etc., to mention only a few, is the first step in this direction. The creation of the European Union as a super state, followed by several similar regional unions, is a forthcoming step. This is clearly an attempt to create a

strictly hierarchical social structure resembling a national structure and distribution of power and governed by today's power elite.

Recently, the power elite abandoned the controversial term “New World Order”, replacing it with a term better accepted by the general public, “globalisation”. In fact, this is one more “ism” or globalism in action. “*Globalisation*” and “*globalism*” are diametrically opposed terms. They should be differentiated clearly. “Globalism”, as revealed by the power elite, is the creation of an artificial, hierarchical and manageable social structure – world government or New World Order.

4. Expected Structural Changes in the Foreseeable Future

People are not blessed with the ability to see deep into the future, but following the general principles and dialectics of social evolution, we can outline some of the most important upcoming changes as the consequences of social evolution.

4.1. Transition from a Hierarchy to Network

Today, social evolution is in a process of a clash between the objective tendency to form a network and the subjective predisposition of hierarchy. The governing elites in the past and the power elite today have created a hierarchical structure based on core values – land and money – or a dominant form of social consciousness – religion and politics. Newly accumulated knowledge expands the complexity of society and the necessity of horizontal changes in the social structure. In general, the course of social evolution is from a man-created hierarchy to an objective-created network. Hierarchical development is a quantitative process of the accumulation of knowledge. The transition to network is a qualitative leap towards a new social structure adequate for the complexity of modern society. The complexity of society creates a hierarchical network of newly emerged sub-systems. This is the most important transition since the Agrarian Revolution 10000 years ago, which transformed the primitive network of hunting and gathering social groups into a highly sophisticated hierarchy. Today the process is in the opposite direction – finalising the full helix of social evolution.

4.2. Transition from Democracy to Collabocracy

The decision-making mechanism will be transformed from collective to collaborative intelligence or from the already obsolete democracy to the more sophisticated collabocracy.

“*Collective*” and “*collaborative*” intelligence look misleadingly similar, but they are different in principle. *Collective intelligence* is a ground of democracy. This is a *quantitative mode of making decisions based on a voting system*, choosing one of several options. It is typical for political parties and organisations. *Collaborative intelligence is a qualitative mode of solving problems and making decisions based on the verification of feasible models*. For instance, science and technology, among many other fields, employ collaboration as a method, i.e. there is no voting system at all. The downfall of democracy today is objective by nature, because the complexity of modern society generates global problems that cannot be resolved by a voting system. They require a problem-solving mechanism, which is collaborative by nature and involves experts. This situation is similar to the situation when

individual intelligence (autocracy) was not in a position to solve the emerging problems generated by the industrial society. Therefore, the transition from democracy to collabocracy is inevitable and a matter of time.

4.3. Creating Collaborative Networks Resembling a Virtual Brain & Global Mind

The horizontal social structure is self-governing in principle. This means for the local community to be organised in a manner to manage resources, distribute and redistribute goods and make all vital decisions to ensure the well-being of the local population. The only way to do so is to create networks of decision-makers resembling a virtual brain and mind. These are self-selected knowledgeable people according to their expertise and experience in making decisions in favour of the community as a whole. They are the new elite, incorruptible by definition.

“The emerging social self-consciousness needs to reach “a critical mass” to be fully implemented.”

4.4. World Government or Single Organism

Today there are two clear visible and contradicting tendencies – *establishing a world government*, imposed by the power elite as a continuation of the still alive Financism, and *integration of nations into a “single living organism”*, presented by the ongoing process of globalisation and differentiation, forced by social evolution. This is a truly horizontally organised social structure. This means that society would be organised by “systems and organs”, resembling the systems and organs in the human body. Which tendency will prevail is a matter of power. *The power elite are powerful with respect to the rest of the population, but powerless in regard to social evolution.* The only remaining question is the price of this clash.

4.5. Separation of the Power of Money and Political Power

This change is inevitable and perhaps one of the first in a line of changes, because of the emerging social self-consciousness. This will be a transition from a money-driven to moral and knowledge-based society and the premise for the transition from today’s technological to tomorrow’s humanitarian civilisation.

5. Modern Society between Hope and Tragedy

5.1. Peaceful and Bloody Transitions

Qualitative changes are known as revolutions. As a rule of thumb, cultural and economic revolutions are peaceful by nature; only the replacement of governing elites tends to come with bloody upheavals. Cultural revolutions are initiated by a few people and grow to become a “critical mass” of people able to change the existing social structure. For instance, Christianity is a cultural revolution that replaced polytheism with a more sophisticated monotheism, and only 12 apostles initiated it. The Renaissance, Reformation and Enlightenment are three stages of the cultural revolution, which replaced the religious form of social consciousness that was dominant at the time with today’s dominant political social consciousness. Only a

few Italian artists, German priests and French philosophers initiated it. In a similar way, the emerging *social self-consciousness* needs to reach “a critical mass” to be fully implemented and provoke qualitative changes in the economy and decision-making process.

The ongoing cultural revolution, the emerging social self-consciousness and the transition from “social puberty” to social maturity are objective necessities and a new helix of social evolution. They are peaceful and a great hope for humanity. However, these qualitative changes cannot be taken for granted. They face the desperate resistance of today’s governing and power elites. Financism created the power elite, who have clear aspirations for world dominance, implementing world governance or a New World Order. These aspirations resemble the Soviet’s notorious “World Revolution” and the Nazi’s thousand-year Reich. Financism, the power elite and New World Order are predetermined to end due to the same reasons – *inability to self-regulate*. The only question is – how? A peaceful collapse like communism or in bloody upheavals like fascism?

5.2. The Clash between the Outdated Mindset of the Power Elite & Social Evolution

Today there is only one time bomb, treating to destroy humanity. This is *outdated, hypocritical, egocentric and highly self-delusional, not to say the pathological mindset of the power elite*. This is a group of people very good at ripping-off society and truly mediocre at comprehending morality, social values and humanity as a whole.

The most dramatic challenge for modern society is the clash between the outdated mindset of the power elite and objective self-regulating requirements of social evolution. The governing elites in the past and the power elite today are slightly different, but still share similar characteristics. They are arrogant, hypocritical, smug, self-indulgent and highly delusional. Some rulers were considered as geniuses at their time of power, but the historical judgment is that they were megalomaniacs and sociopaths.

At the time of the ongoing qualitative changes, all the governing elites tend to destroy themselves due to their outdated mindset, making profoundly wrong decisions. For instance, refusing to pay taxes in order to fix the fiscal crisis in 1788, the French aristocracy triggered the French Revolution. Apparently, they did not expect something like that to happen, not to say many of them, including the royal family, to be guillotined as a result of this decision. In 1825, the Russian tsar Nicolas I crushed the Decembrist revolt and Russia had an absolute monarchy. A century later, Russia’s aristocracy was swept out. After the assassination of the Austrian Archduke Franz Ferdinand, European monarchies initiated the First World War, and in a decade, most of them disappeared from the map. When the Nazi party leadership started WWII, they were not in a position to predict the terrible outcome for the ruling elite. The Soviet nomenclature survives the collapse, because some of them were tempted to become oligarchs. In fact, the collapse of communism was a transition from Communism to Financism, which is also an artificial social system. In this way, they postponed their destruction to become extinct together with oligarchs, created by Financism.

Analysing how the outdated ruling elites have been replaced by a new one could point out two features outlining the faith of elites and the price paid by ordinary people.

- a. Elites gaining absolute power like the French and Russian absolute monarchies were physically destroyed. The French royal family was guillotined; the family of Russian tsars was assassinated. At the end of WWII, Hitler and Eva Braun committed suicide and Hitler's henchmen were sentenced to death by an international tribunal. Liberal monarchies, which triggered WWI, were wiped off the map, but physically survived. Surrendering its political power, the British monarchy survived and remains as an institution. Therefore, the destiny of governing elites is in direct proportion to the gained and abused power.
- b. The price paid by ordinary people tends to rise: communism brought enormous suffering and took at least 20 million lives in the Soviet Union alone. World War II, provoked by fascism, caused three times as much suffering and deaths across the world. Today's Financism and power elite already cause misery to nearly three billion people, pressing them to live on less than two dollars a day.

5.3. *The Dilemma of Modern Society*

The clash between the outdated mindset of the power elite and social evolution generated the biggest dilemma of modern society. *It is the destruction of society or fundamental changes in the social structure.*

The outcome of the clash between the power elite and social evolution is determined by one global contradiction. This is the contradiction between the exponential development of high technologies and the increased vulnerability of humanity.

Briefly, the technologies of the 21st century (robotics, genetic engineering and nanotechnology) provide opportunities for knowledge alone, without significant material resources, to destroy humanity. There can be no doubt that an increase in knowledge also increases the vulnerability of society and at a certain point in its development, could destroy the world. This possibility became a reality with the invention of the atomic bomb and has become even more obvious with the development of chemical and biological weapons of mass destruction. The emergence of 21st century high technologies makes the destruction of humanity almost inevitable. It seems we have learned to use technology to our benefit, but even today, we do not actually realise the full extent of the downside of new inventions until it is too late.

In fact, during the last few decades, science and technology have tended to expand exponentially. Unfortunately, to make things worse, many significant scientific discoveries and technological achievements have been applied to the production of more powerful weapons. They are produced more easily and cheaply rather than for constructive purposes. For instance, if the resources needed to create nuclear weapons are at a national level, the resources for the knowledge enable mass destruction weapons, accessible only to a small group of people. As a result, the technological civilisation faces one terrible dilemma – *with the accumulation of knowledge, society becomes simultaneously more powerful and more vulnerable.* This point of social evolution is unique and something which humanity should take into account from now on. Therefore, the exponential development of high technologies

and the increasing vulnerability of humanity make structural changes inevitable. Destruction of humanity is not an option.

The idea that a digitally based security system could guard the New World Order is very naïve, not to say stupid. Even the most notorious security systems in the past did not succeed in preserving outdated or artificially created systems. As history teaches us, the Inquisition, Gestapo, KGB and Stasi to some extent worked well. However, after a certain point in social development, they turned their power against the systems they were supposed to protect and became a significant factor in their destruction. The future society does not need a security system typical for hierarchically structured and governed societies like a “digital Big Brother”. It needs an “immune system” intrinsic to horizontally structured systems like living organisms.

The clash between the outdated mindset of the power elite and social evolution could cause the biggest tragedy in human history. Until the power elite choose how to pass on – gaining absolute power and die as absolute rulers in the past did or being forced to surrender by social self-consciousness – humanity will live with hope and fear of tragedy.

“The clash between the outdated mindset of the power elite and social evolution could cause the biggest tragedy in human history.”

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BOOK REVIEW

Two Cheers for the Millennium Project

by **Michael Marien**

Fellow, World Academy of Art & Science;
Director, Global Foresight Books

2013-14 State of the Future (17th Edition)

Jerome C. Glenn* (Director, Millennium Project), **Theodore J. Gordon** (Senior Fellow, Millennium Project), and **Elizabeth Florescu** (Director of Research, Millennium Project). Washington: The Millennium Project, April 2014, 247p (6x9”), \$39.95pb. PDF in English or Spanish, \$29.95. www.themp.org [Note: Various comments by the reviewer are set off within brackets.]

For better and for worse, there is nothing quite like The Millennium Project (MP), an awesome but unwieldy distillation, of trends, forecasts, and proposals largely concerning 15 Global Challenges. This is backed up with a distinctive organization of 50 “Nodes” (up from 18 Nodes in 2003 and 35 Nodes in 2010), including groups in Argentina, Australia, Bolivia, Brazil, the Caribbean, China, Egypt, the Persian Gulf Region, Israel, Japan, Kenya, Malaysia, Mexico, Peru, Romania, Russia, Silicon Valley (US), Turkey, UAE, etc. The Nodes participate in creating the **State of the Future** (SOF) report, and in turn are its ready-made audience.

The purposes of the MP are 1) to assist in organizing futures research; 2) to improve thinking about the future; and 3) to “make that thinking available through a variety of media for consideration in policymaking, advanced training, public education, and feedback, ideally in order to accumulate wisdom about potential futures.”

What is new from the last time I reviewed a **State of the Future** report, in 2010, is a changed format (247 pages in 6x9” size vs. 88 pages in 8x11” size with attached CD) and biannual publication of the hardcopy in contrast to annual publication for the first 16 editions. This is enabled by continuous online updating of MP’s Global Futures Intelligence System (GFIS). On the GFIS website, each of the 15 Global Challenges is given a more detailed treatment in a 12-point menu: **Situation Chart** (current situation, desired situation, and policies to close the gap), **Overview** (summary and 100-300 pages of details), **Digest** of latest information, **Updates** (scanning important information that impacts the Challenge), **News** relevant to the Challenge, **Real-Time Delphi Questionnaire**, **Discussion** by subscribers, **Comments** from users, **Interactive Computer Models**, **Questions** for experts, and **Resources** (relevant websites, books, videos, and articles). Subscription to GFIS is \$100/year for individuals, \$400/year for universities, \$800/year for the UN and other international organizations, \$850/year for governments, and \$2100/year for corporations. The four classes

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of organization subscriptions allow 10 free users, and charge \$25 for each additional user. It's complicated, but so are the SOF and the GFIS.

1. The 15 Global Challenges

Since 1996, the bulk of each MP report has always been the 15 Global Challenges, which are “transnational in nature and transinstitutional in solution.” This time each Challenge is introduced by a rather confused two-page graphic highlighting key data and trends (a new feature), a 4-5 page global overview (concluding with potential actions), and 3-4 pages of “Regional Considerations” in Africa, Asia and Oceania, Europe, Latin America, and North America. The problem-riddled Middle East, which deserves a separate category, is sometimes included in Africa, and sometimes in Asia. The Arctic region, due to low population, is not mentioned at all, but is increasingly important for resources made available by melting sea ice *and* for the methane released by melting tundra and sea ice which could overtake CO₂ as the major greenhouse gas. Methane is mentioned (pp.23-24) but “warming ocean water releasing methane hydrates from the seabed” has yet to happen [if it ever does to any substantial degree, humanity is finished].

The 15 Challenges, presented here in a more logical order than in the Report, are as follows:

Sustainable Development and Climate Change. The world continues to warm, and global ecosystem services are being depleted faster than nature can resupply them. “A major study reports that climate change costs \$1.2 trillion per year and causes 400,000 deaths annually.” (p.24). [No source is mentioned, although sources are mentioned for some of the data cited.] Suggested remedies [with no distinction in any Challenge as to cost, feasibility, acceptability, or imminence] are a US-China Apollo-like 10-year crash program to address climate change, suing for damages caused by GHGs, and new technologies like saltwater agriculture, maglev trains, sunshades in space, and growing pure meat without growing animals.

Clean Water without Conflict. Over 2 billion people have gained access to safe drinking water since 1990, but global water demand could rise to 40% above the current supply by 2030. Remedies include breakthroughs in desalination, less costly pollution treatment, hydroponics, vertical urban agriculture, more vegetarianism, fixing leaking water pipes, and drip irrigation.

Balancing Population and Resources. World population is expected to grow another 1 billion by 2025, with the UN mid-projection of 9.6 billion by 2050. “If fertility rates continue to fall, world population could actually shrink to 6.2 billion by 2100.” (p.42). [On the other hand, watch upward “projection creep” of official estimates; world population may be well over 10 billion by 2100 or even 2050 if various medical breakthroughs are realized, especially “longevity technologies,” mentioned only in passing by SOF, p.45.] To keep up with population and economic growth, food production should increase 70% by 2050.

Rising Energy Demands. “Innovations are accelerating”: drilled hot rock geothermal, solar farms, concentrator photovoltaics, plastic nanotech photovoltaic devices (PVs) printed on buildings, waste heat from power plants and human bodies, microbial fuel cells, metal-air

batteries, using halophytes and algae to produce food and liquid fuels, low-energy nuclear reactors, high altitude wind power, etc. “Yet global energy-related CO₂ emissions increased 1.4% in 2012, (and) without major breakthroughs...the majority of the world’s energy in 2050 will still come from fossil fuels.” (p.154). Nearly two-thirds of new gas supply to 2035 could come from shale gas; “however, the process of fracking to get the gas may release methane” (p.156) and “could contaminate groundwater” (p.33). [There is no doubt whatsoever that fracking releases methane and pollutes water; the only question is how much and where.]

“More participatory democracy may grow from e-government and a better-educated world public.”

Peace and Conflict. The Stockholm International Peace Research Institute (SIPRI) estimates global military spending at \$1.76 trillion in 2012. Interstate wars may be disappearing, but growing populations and economies drain natural resources and degrade the environment, leading to conflict. “Future effects of climate change could create up to 400 million migrants by 2050, which could further increase conditions for conflict.” (p.120). Remedies include good governance, sound economies, equitable distribution of resources, human rights, low levels of corruption, new technologies enabling better monitoring and cleanup, non-lethal weapons, and destroying stockpiles of biological and chemical weapons. “The probability of a more peaceful world is increasing...” (p.117). [This conclusion is deeply problematic, especially in recent months.]

Ethical Market Economies to Reduce Rich/Poor Gap. 1.2 billion people still live in extreme poverty, half of them in fragile states (World Bank estimate) and 1.7 billion people live in multidimensional poverty (UNDP). The number of working poor is declining globally (ILO), but growing income disparity is seen by the World Economic Forum as the most likely global risk in the next decade. New technologies and innovations are empowering people worldwide, to create new forms of business with potential to reduce these disparities. “By 2030, the global middle class is expected to grow by 66% – about 3 billion more consumers with increased purchasing power and expectations... (but) almost 48% of all employment in 2013 is vulnerable employment.” (pp. 86-87) [Source not indicated]. The remedy is a long-term strategic plan for a global partnership between rich and poor, using “the strength of free markets and rules based on global ethics.” [Conflict between “free markets” and “global ethics” is not considered.]

Democratization. “An educated and truthfully informed public is critical to democracy.” (p.54). But, according to Freedom House, world political and civil liberties deteriorated for the eighth consecutive year in 2013, and press freedoms have also declined over the past several years. “Some argue that democracy is increasingly threatened by monetocracy... although the long-range trend toward democracy is strong.” (p.52). [This, too, is very problematic.] More participatory democracy may grow from e-government and a better-educated world public. But the World Bank estimates that \$1-1.6 trillion is paid annually in bribes.

Transnational Organized Crime (TOC). “Total organized crime income could be over \$3 trillion — about twice as big as all the military budgets in the world.” (p.142). Estimates of

cybercrime alone range from \$300 million to \$2 trillion per year. The War on Drugs has failed, costing the US \$2.5 trillion over the past 40 years, and the popularity of new psychoactive substances is growing rapidly. Money laundering continues unabated, despite the OECD Financial Action Task Force. Remedies include a new financial prosecution system and an international campaign by all sectors of society to develop a global consensus for action.

Global Ethics. “Acceleration of scientific and technological change seems to grow beyond conventional means of ethical evaluation.” (p.172). Corporate social responsibility programs, ethical marketing, and social investing are increasing. Global ethics are also emerging worldwide through evolution of ISO standards and international treaties. Yet “corruption remains prevalent throughout the world” and the abuse of power is spreading seriously. Better incentives are needed for ethics in global decisions, as well as ethical and spiritual education growing in balance.

Empowerment of Women. Changing the status of women is one of the strongest drivers of social evolution, and is essential for addressing all global challenges. Women are increasingly engaged in political and economic decision-making, yet the 2012 Gender Equity Index shows that none of the 154 countries assessed has narrowed the gender gap to an acceptable level. Most countries are making only slow progress, discriminatory social structures persist, about 70% of people living in poverty are women, and 35% of women worldwide have experienced physical and/or sexual violence.

Health: New and Reemerging Diseases. The incidence and mortality of infectious diseases are falling, but antibiotic resistance, malnourishment, and obesity are increasing. Poverty, urbanization, travel, and concentrated livestock production move infectious organisms to more people in less time than ever before, and could trigger new pandemics. Current high risks of epidemics include resistant superbugs, MRSA, flu in its many forms, Corona Virus, food-borne epidemics, cholera, drug-resistant TB, a new HIV strain, and dengue. [Note: Ebola not mentioned, underscoring the importance of a long list of game-changing wild cards, but has been acknowledged in the GFIS.] New problems may come from unregulated synthetic biology laboratories of the future.

Science and Technology (S&T) to Improve the Human Condition. “Continued acceleration of S&T is fundamentally changing what is possible, and access to this knowledge is becoming universally available.” (p.162). Discusses synthetic biology enabling lower-cost biofuels and pollution clean-up, “smart dust” wireless sensors to monitor chemicals and biologicals, DNA scans enabling customized medicine, a new anti-virus strategy, nanoscale robots, the falling cost of 3D printers, and the need for a Global Collective Intelligence System to track S&T advances and forecast potential consequences.

Global Convergence of IT. Nearly 40% of humanity uses the Internet, and “it is reasonable to assume that the majority of the world will (soon?) experience ubiquitous computing and eventually spend much of its time in technologically augmented reality...collaborative systems, social networks, and collective intelligences are self-organizing into new forms of transnational democracies...giving birth to unprecedented international conscience and action.” (p.74) The Internet of Things is expected to connect 75-80 billion items to the Inter-

net by 2020 [source not provided]. However, acceleration in automation is a serious threat to future employment, and multitasking with smartphones may cost the world economy billions per year in lost productivity. Universal broadband access should become a priority for all countries.

Education and Learning. How can humanity become more intelligent, knowledgeable and wise to address its global challenges? “Google and Wikipedia have become the foremost source for public education. The Internet is reinforcing curiosity and lifelong learning. The ideal of excellent curricula and excellent teachers available to all is a possibility within sight.” (p.110). [All three of these statements are problematic.] Youth and adult literacy rates are improving, and brain functioning could be improved by better nutrition, drugs, software, etc. “Ministries of Education should declare increasing intelligence as a national goal of education, which could speed up learning.” (p.111) But in North America, university tuition fees are increasing, and many graduates end up with high debts but poor job prospects.

Improved Global Foresight. Decision-making is based on beliefs about the future, but “judging information about the future is increasingly difficult due to the acceleration, complexity, interdependence, and globalization of change.” (p.62) Moreover, the growing number of people and cultures involved in decisions also increases uncertainty and ambiguity. We have far more data, research evidence, and computer models to help make decisions, but also far more information overload and excessive proliferation of choices. “Humanity needs a global, multifaceted, general long-view of the future with long-range goals to help it make better decisions” (p.63), and governments are increasingly creating some form of future strategy units.

The next set of UN Millennium Development Goals and each of the 15 Global Challenges could provide a basis for trans-institutional coalitions that address a specific challenge or goal.

2. Bouquets and Brickbats for the Big 15

The above overview of the 15 Global Challenges is necessarily very condensed, with a focus on what this reviewer judges to be some important highlights of each. There is much to commend this ambitious overview, but also much to question.

On the positive side, a huge amount of information is assembled in these 15 categories, much of it from respected international organizations such as various UN agencies, OECD, IEA, World Bank, Transparency International, and Freedom House. An effort is made to show both positive and negative trends, to discuss new technologies [which are too often absent from many global overviews], and to look at regional developments [albeit superficially]. The Challenge of Transnational Organized Crime is distinctive, important, and too often ignored by others.

On the negative side, the presentation leaves much to be desired. Some statements are referenced, but many are not, and the lack of full reference leaves the reader in the dark as to when cited data were published [presumably they are up-to-date, but this should be explicit]. Overall, there is a relative lack of attention to environmental issues [e.g., ignoring or only casually mentioning ocean pollution and acidification, air and freshwater pollution, soil loss

and degradation, pressures on key ecosystems, and pollution from toxic chemicals]. The concept of “planetary boundaries” is ignored, as well as associated risks of surprises, tipping points, and threshold effects that many climate scientists worry about (See Anders Wijkman and Johan Rockström, *Bankrupting Nature: Denying Our Planetary Boundaries: Report to the Club of Rome*; Routledge, 2012). Another major area that is ignored is the need for a new 21st century economics that pays attention to human, social, and natural capital and goes beyond 20th century fixation on growth of GNP.

In contrast to under-attention to the environment, there is over-attention to new technology, which in most instances is treated uncritically. A good example is the Energy Challenge, where there are many interesting new technologies to promote energy efficiency or supply cheap, safe, and abundant energy. But simply to say that all of these “innovations are accelerating” is an overgeneralization. Rather, a full list of possibilities should be presented, along with some sense of their current and probable development, time to commercial application, and possible side effects. Other examples of unrestrained techno-exuberance are the Infotech Challenge [the downside of infoglut is mentioned only in connection with the Global Foresight Challenge] and the Education Challenge, where increasing intelligence is cited as a national goal, even as millions of college graduates remain unemployed or underemployed. In turn, this raises the question as to why Decent Employment for All is not one of the Global Challenges—a growing concern, as robots replace human workers (which is acknowledged).

An index is badly needed, at least to major topics, as well as critical editing to avoid naïve and insensitive comments such as “Because youth unemployment is growing, more people have more time to do something about this abuse.” (p.2) Better presentation is also needed to avoid long paragraphs with multiple unrelated topics, e.g. in describing sustainable development for North America, a single paragraph covers California’s cap-and-trade program, temperature increases in northern Alaska, falling honeybee populations, air pollution costs for children’s health, planned investment to clean up the Florida Everglades, Bank of America’s \$50 billion green investment program, continuation of Canada’s ugly tar sands exploitation, and a new Sustainability Merit Badge announced by the Boy Scouts. (p.28). These tidbits would be better presented with bullets, and some sort of categorization and synthesis if possible.

Finally, the pervading sense of certitude should be modified by a list of improbable wild cards (so-called “black swans”), regular wild cards (roughly 2% probability) and not-so-wild cards (10-30% probability). The sudden eruption of the Ebola crisis, the emergence of the Islamic State (a.k.a. ISIS), and serious tensions in Ukraine after Russia’s takeover of Crimea illustrate the need to be aware of a broad range of possibilities, many of them unpleasant, and to be humbly alert to new developments not anticipated by MP or anyone else (e.g. fracking).

The GFIS update, however, does mention these developments.

3. Progress or Regress: A “Happy Thumb” on the Scale?

The bottom line of this ambitious exercise is to ask whether, all things considered, humanity is really making progress or moving backward, and to speculate on the outlook for the

future. As SOF describes it, “The world is in a race between implementing ever-increasing ways to improve the human condition and the seemingly ever-increasing complexity and scale of global problems. So, how is the world doing in this race?” (p.4). It all depends on what indicators are assembled.

Since 2000, the Millennium Project has produced a global “State of the Future Index” (SOFI) based on 30 variables for which there are “at least 20 years of reliable historical data.” These are categorized into three groups: 1) *Where We Are Winning*: greater life expectancy, slower rate of world population growth, less undernourishment, lower infant mortality rate, improved water sources, more secondary school enrollment, higher adult literacy rate, more electricity from renewables, higher energy efficiency, more Internet users, more physicians per 1000 people, more health spending per capita, declining number of wars, more foreign direct investment, less poverty below \$1.25 per day, more gross national income per capita, and more seats held by women in national parliaments. 2) *Where We Are Losing*: growing ecological footprint/bioclarity ratio, greater income inequality, more terrorism incidents, more corruption, more CO₂ emissions from fossil fuels and cement production, less forested area, and less renewable freshwater per capita. 3) *Where Things Are Unclear or Little Changed*: unemployment, voter turnout, freedom rights, R&D spending, prevalence of HIV, and number of countries that have nuclear weapons or intend to build them. The overall assessment offered is: “*slower progress since 2007, although the overall outlook is promising*” (p.6; italics added).

However, the overall outlook would not be nearly as promising if certain indicators are adjusted and others (with less than 20 years of reliable data) are added. First, insofar as the higher adult literacy rate, this refers only to very basic skills. A more relevant measure would be “functional literacy” to get around in today’s world (roughly equivalent to a high school degree), and by this measure we are falling behind. The “declining number of wars” should be amended with a qualitative assessment, e.g. Syria’s vicious civil war has displaced nearly half of its 22 million population. And if *underemployment* is added to “*unemployment*,” this indicator would very likely deserve to be listed in the “losing” group. “Freedom Rights” also seems quite problematic, and a fairly good candidate for the “losing” group in recent years. The MP insists that “the long-range trend toward democracy is strong” (p.9) despite Freedom House reports of declining political and civil liberties in the past eight years — which could be a downward turning point. “Increasing numbers of educated and mobile phone Internet-savvy people are no longer tolerating the abuse of power,” (p.9) but discontent and protests have not resulted in much positive change so far (and note that terrorists are quite skilled at using the Internet and social media to pursue their ends). Finally, we are losing even more if we consider growing methane emissions from the Arctic, which could displace CO₂ as the leading greenhouse gas.

The outlook looks even less promising if indicators are added on the declining state of the oceans, biogeochemical loading (interrupting the nitrogen and phosphorus cycles), pollution from toxic chemicals, atmospheric aerosol loading (soot particles, nitrates, sulphates), more frequent and extensive wildfires, more frequent and dangerous storms, rapidly melting glaciers, more droughts and desertification, biodiversity loss, degradation of land and wildlife

habitats, rapidly growing cyber-attacks (see SOF, p.80), transnational organized crime (SOF, pp140-149), unhealthy food and drink (see below), vulnerable coastal areas (see below), more lone-wolf terrorism (see below), growing fundamentalism in religion and politics, fragile economies, increasing legal and illegal drug use and misuse, rapid growth of information overload (see Mark Andrejevic, *Infoglut: How Too Much Information Is Changing the Way We Think and Know*; Routledge, 2013), and disintegrating and/or inadequate infrastructure (water systems, railways, highways, and especially bridges). All of these are “unhappy” indicators, and all seem quite likely to worsen, at least in the short term.

It is time for a serious re-think of the SOFI that removes the “happy thumb” bias on the progress/regress scale, and includes all important indicators, many of which have less than “20 years of reliable historical data.” If futures research is ever to be taken seriously, it should pursue an ethic to “tell it like it is,” not pull punches, and restrain idealized speculation about possible tech fixes.

4. Other Chapters in the Report

The State of the Future Index and the Global Challenges are the mainstay of the SOF report. But there are other chapters in each report. This current edition includes four, each deserving consideration:

- *Hidden Hunger: Unhealthy Food Markets in the Developing World* discusses growing concerns that 2 billion people are getting sufficient calories but lack proper vitamins and minerals, due to industrial agriculture and expanding monoculture, low income to food price ratio, water scarcity, food waste, dietary culture, nutritional ignorance, expanding fast food chains, and more processed foods. This MP Real-Time Delphi conducted for the Rockefeller Foundation concludes with some 80 policy proposals such as taxing unhealthy foods, regulating soft drinks and low-quality food, incentives to market healthy foods, and global organic food quality standards. [Note: Unlike the discussion of the 15 Global Challenges, this chapter does include proper footnoting. It can be done by MP! But the proposals are not prioritized.]
- *Vulnerable Natural Infrastructure in Urban Coastal Zones*, another Real-Time Delphi for the Rockefeller Foundation, explores degrading of natural infrastructure due to coastal urbanization, pollution, and lack of urban planning. Also includes a long list of policy proposals such as land zoning, better public information, ISO standards for coastal environmental management, and increased taxes and fines for polluting practices.
- *SIMAD and Lone Wolf Terrorism Prospects and Potential Strategies to Address the Threat*, a Real-Time Delphi study conducted by the MP Israeli Node, considers the increase of Single Individual Massively Destructive (SIMAD) actions using a variety of weapons, and prevention strategies such as monitoring social media and purchases of critical materials. Minimizing such threats is “a long-time continuous effort.”
- *Global Futures Intelligence System and Some Conclusions* asserts that “collective intelligence is becoming the next big thing in information technology.” It is defined as

improving information and synergies among groups of experts and the public, hardware/software, and data/information/knowledge. But there are thousands of experts on the various Global Challenges, and many thousands of relevant books, reports, and articles. Which experts and ideas are to be included in “collective intelligence,” and which will be ignored? Despite the impressive 50 Nodes of the MP, there are many more experts that could and should be included in a GFIS, despite clashing worldviews and data. The extent of the growing universe of expertise and how to assess and select is not considered. GFIS is still a work in progress. We do not yet know if it is even a minimally adequate “global information utility” that fairly represents all responsible thinking.

“Our world is evolving at an ever-faster pace, and the Millennium Project must keep improving and evolving to keep pace, and rise to a higher level.”

5. Some Final Comments

In reviewing the 2010 SOF report, I concluded that it was “the best introduction—by far—to a broad range of major global issues and long-term remedies.” SOF remains the best introduction because there is nothing like it. But, on deeper reflection, introduction must be stressed. The report gives a unique taste of many trends, forecasts, and policies, but it deserves only “two cheers” at best. It could do a much better job of conceptualizing the Global Challenges and the SOFI, and presenting these in a more user-friendly format.

The 15 Global Challenges should be expanded to include Decent Livelihoods for All (encompassing jobs, entrepreneurship, and various forms of self-sufficiency), Higher and Continuing Education for All, Food and Agriculture, Sustainable Cities, and Humane Criminal Justice. If this adds too many challenges, IT and Sci/Tech could be combined.

The 30 indicators of the State of the Future Index, currently constrained by overly rigid criteria, should be expanded by a dozen or so more, as explained above. SOFI is clearly not a reliable summation of where we are and where we are headed. Expansion adds complexity and involves painful changes, but it is necessary for a more balanced and honest perspective. Collaboration with the Worldwatch Institute’s annual “Vital Signs” effort might be fruitful.

Presentation of this cornucopia of information would be greatly aided by shorter paragraphs, bulleted points, boxes, tighter editing, footnotes to important data and forecasts, better graphics, identification of each Challenge at the top of the page, and—above all—by adding indexes for handy access. It may be impossible to capture every idea, organization, and nation mentioned, but some index of selected ideas would be far better than none at all.

This review was concluded on Election Day 2014 in the United States, which produced an outcome quite different from the globalist-progressive views expressed in this MP report.

Despite the many wonders of the Internet, I know of no evidence to suggest that the voting public is better informed now about current affairs and global challenges. Arguably, with the marked decline in newspaper circulation and foreign affairs coverage, and abundant infoglut, the public is less well-informed. And there is virtually no futures education in schools and colleges. Far better education about Global Challenges is greatly needed. Our world is evolving at an ever-faster pace, and the Millennium Project must keep improving and evolving to keep pace, and rise to a higher level.

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The editors welcome submission of proposals, articles, ideas, abstracts, reviews, letters and comments by Fellows of the World Academy of Art & Science, Members of the Club of Rome and Pugwash as well as invited and unsolicited articles from the public. All proposals are reviewed by the editorial board to determine their suitability for publication in Cadmus.

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The critical task before us today is to transform the ominous challenges confronting humanity into positive catalytic forces for rapid evolution to a new paradigm.

Garry Jacobs, Uncorking the Future: Transitions to a New Paradigm

Current governance and international institutions should be upgraded fast enough to harness and channel change, instead of being overwhelmed by it.

Alexander Likhotal, From Reset to Reboot?

To give expression to the subconscious aspirations of society that are striving to awaken and act as a catalyst for their realization is the essence of transformational leadership.

Janani Harish, Leadership for a New Paradigm in Human Development

Einstein stressed that the most incomprehensible thing about the world is that it is comprehensible.

Ivo Šlaus, Employment & Unity of Social Sciences

The effectiveness of knowledge is given by its movement. It does not produce anything when it lies still; it yields everything when it is intensively used.

Orio Giarini & Mircea Malitza, The Double Helix of Learning and Work

Effective economic theory must shift its basis from an inordinate reliance on financial and technological capital to recognition of the central role of Human Capital – individual and social – as the ultimate source and motive power of all wealth creation, welfare and well-being.

Garry Jacobs, Contours of New Economic Theory

We have a financial sector out of control, divorced from the real economy and incapable of providing the liquidity at the scale needed to address key sectors of the real economy.

Ian Johnson, Can we Finance the Energy Transition?

Social problems appear as contradictions. Eventually, the development of society is a result of resolving contradictions.

*Dimitar Tchurovsky, The New Paradigm of Social Evolution:
Modern Society between Hope and Tragedy*

There is virtually no futures education in schools and colleges. Far better education about Global Challenges is greatly needed.

Michael Marien, Book Review

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Yehezkel Dror,
Preventing Hell on Earth

Continued . . .
