



PROMOTING LEADERSHIP IN THOUGHT
THAT LEADS TO ACTION

THE WEALTH OF NATIONS REVISITED

CADMUS

**A papers series of the South-East European Division
of the World Academy of Art and Science (SEED-WAAS)**

Volume I, Issue 5

October 2012

ISSN 2038-5242

Editorial

SEED-IDEAS

Recognizing Unrecognized Genius
Counter-Aging in the Post-Industrial Society
Seeding Intrinsic Values

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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 with 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 integrate knowledge from all fields of science, art 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 Risk Institute - Istituto del Rischio

Via della Torretta, 10 - 34121 Trieste - Italy / 53 route de Malagnou - 1208 Geneva - Switzerland

Editorial Office: 5, Puduvali Sivam Street, Venkata Nagar - Pondicherry 605011 - India

Published under Open Access policy guidelines.

See the last page for Editorial Policy.

Websites: www.cadmusjournal.org - www.worldacademy.org - www.newwelfare.org

E-mail: editor@cadmusjournal.org

Printed by: Akaram, Plot No.1, Nirmala Nagar, Thanjavur, India



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Volume I, Issue 5

October 2012

Published by
THE RISK INSTITUTE
GENEVA - PONDICHERRY - TRIESTE - ZAGREB

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.

The Editorial Board

CADMUS
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Volume I, Issue 5, October 2012

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Inside this Issue

*This issue of **Cadmus** Journal reflects the significant intensification of the World Academy's programming and collaboration that has taken place since the June conference on "Humanities and the Contemporary World" in Podgorica conducted in collaboration with the Montenegrin Academy of Sciences and Arts and the "1st International Social Transformation Conference" organized by the Global Round Table in Split in July, which WAAS co-sponsored, as reported in the first issue of **Eruditio** and the Summer 2012 WAAS Newsletter. In September, the Academy was co-organizer of two international conferences in Dubrovnik on "The Dream of a Global Knowledge Society" with the Inter-University Centre and on "Nuclear Threats and Security" with the European Leadership Network and the Dag Hammarskjöld University College of International Relations and Diplomacy; co-sponsor of the "14th International Conference on Sustainable Development and Eco-innovation" organized by the AGH Engineering University in Krakow; and knowledge sponsor of the "European Forum for New Ideas", a major gathering of European business leaders organized by Lewiatan in Sopot, Poland. In addition, WAAS continued its close collaboration with the Club of Rome on New Economic Theory at the Club's Annual Conference in Bucharest. A detailed report on these activities is included under the section Activities and Events.*

*The themes and discussion at these diverse events powerfully reinforce the growing global concern with the issues of economy, ecology, governance and security examined in previous issues of **Cadmus**. Scientists, scholars, business leaders, technocrats and politicians concur that solutions to the pressing problems of humanity cannot be found without a fundamental shift in values and radical changes in the policies and rules by which national and global systems are governed.*

But new policies and rules are not sufficient. The current multi-dimensional crises all point to the inadequacy of the conceptual framework through which we view and strive to understand the challenges and opportunities facing humanity today. Thus, there is also urgent need for new thinking, theory and perspectives. The core of the change needed is a view that recognizes the central role of human consciousness, values and social power in determining humanity's future. On the supply side, we need to develop a Human-Capital-Intensive theory and model of social development, predicated on the recognition that human beings represent the most precious of all resources, inexhaustible in potential. On the demand side, we must recognize that the only valid criterion by which to evaluate the adequacy of our theories is their capacity to successfully promote the welfare and well-being of all humanity. Any theory used to justify the inadequacies and inequity of the present system as the best possible is condemned by its very failure to deliver adequate benefits to society.

"The Power of Mind", the theme of the Club of Rome Annual Conference concluded earlier this month in Bucharest, is of immense relevance to addressing the multiple crises that afflict humanity today. The essential message of the conference is that solutions do exist to the problems confronting humanity but they necessitate fundamental changes in the way we think about global society, public policy and humanity's future. Business as usual, more of the same, simply will not do. We need a radical change of course. Mind has the power to

formulate effective solutions, if it consents to cast off the blinding constraints of conventional wisdom and vested interests.

*Since its conception, **Cadmus** has carried numerous articles seeking to identify the essential tenets of a true science of Economy. Money plays a central role in economics today, yet it is rare to come across a serious, informed discussion of what money really is and what role it plays in modern society. Although we all use money every day, its nature and functioning seem shrouded in commonplace myths and ancient mysteries. This issue includes the first in a series of articles exploring the origins, nature and functioning of money, a challenging analysis of prevailing monetary practices, and an extensive book review of a new report by the Club of Rome's European Chapter explaining the benefits of complementary monetary systems. This issue also includes a critical examination of fundamental premises of prevailing economic theory, an extensive survey of recent books focusing on the need for a new economics, a review of an insightful UN report examining the linkages between economy, ecology and governance, and a special report by the US Chapter of the Club of Rome on the future of the Arctic.*

*Among the founders of the World Academy were several leading scientists associated with the development of nuclear weapons and many others who shared their profound concern from the spread of the nuclear genie since its first appearance in 1945. Drawing on contributions to three recent conferences with which WAAS was associated, the last part of this issue of **Cadmus** is devoted to an in-depth exploration of the significance, utility and legality of nuclear weapons and practical steps that can be taken to free humanity from their very real and present threat to the security of humankind and the preservation of the biosphere.*

Nuclear weapons present an opportunity as well as a challenge. They exemplify a class of issues in which the interests of nations are inseparably intertwined with the security of all humanity and the planet we all share. Therefore, the effort to arrive at a just and effective means for global governance of nuclear weapons is an opportunity to evolve the principles and mechanisms required to address a wide range of other issues in which all humanity has an equal stake and equal right.

*The present global system evolved during a period in which the sovereignty of the nation-state was regarded as the ultimate principle governing international affairs. Since then, the affirmation of human rights and international humanitarian law has advanced far beyond this limited concept in both principle and practice. But our systems of governance are still severely constrained by a concept of sovereignty that gives precedence to the right of nations, irrespective of their mode of governance, over the sovereign rights of humanity as a whole. This issue of **Cadmus** continues our inquiry into the need for a new paradigm in global rule of law more suited to the needs of the 21st century.*

The Editors

EDITORIAL

Call for a Revolution in Economics

*The discipline of Economics is at a cross-roads. Either it undertakes a comprehensive reevaluation of its fundamental postulates and a critical reassessment of their utility to solve real world problems or it risks sliding further into irrelevance. **It is time for a renaissance of thinking in Economics.** The position of Economics today is akin to that of Physics during the 19th century. It has many significant isolated achievements to its credit, but the picture it presents of the way the world actually functions is fragmented, incomplete and grossly imperfect. **As is our knowledge, so is our power for accomplishment.** Inadequate thought leads to failed policies. The problems plaguing the world economy testify to the inherent insufficiency of prevailing economic theory.*

“The starting point is a human-centered theory of value that recognizes human welfare as the central objective and the creativity of human capital as the ultimate resource and source of all others.”

The challenge for economics is compounded in several ways. Unlike the universal laws of Physics, the principles relevant to governing economic systems have changed as the nature of those systems has evolved from the agrarian and commercial economy of Adam Smith's time to the Industrial economy of the 19th century and the knowledge-based service economy that has emerged in recent decades.

*However valid and useful it may have been in the past, **existing economic theory is blatantly inadequate to address the realities of 21st century society,** in which human capital has become the most precious resource, industrialization has exceeded the earth's carrying capacity, economic value is increasingly tied to risk and uncertainty and utilization of service systems over time, public sector is nearly as large as the private sector in many developed nations, social organization has acquired enormous productive power and complexity, the non-monetarized sector represents an essential contribution to human welfare, transport and communication systems are becoming globally integrated, the transformative power of information systems is radically altering the way products and services are delivered and human needs are met, the revolution of rising expectations has become global, and people everywhere clamor for greater freedom and social equality. **New realities necessitate new thinking** and the starting point is a human-centered theory of value that recognizes human welfare as the central objective and the creativity of human capital as the ultimate resource and source of all others.*

The challenge of building a true science of Economy is even more daunting than that faced by the physical sciences, because it must encompass and integrate not merely principles of the material plane, but social and psychological principles as well. The growing power and effectiveness of physical science have been achieved by an increasing unification of previously disparate and apparently unconnected phenomenon into a comprehensive and

“Have we truly exhausted the capacity of human consciousness and creativity to support the further development of global society?”

*cohesive model of the universe. Newton unified motion and rest, heaven and earth. Maxwell unified electricity and magnetism, and optics. Einstein unified acceleration and gravity, space and time. Integration of disparate fields of knowledge has multiplied the effective power of physical science. So too, the various disciplines of social science represent facets of a single, integral reality called society. **Unless or until the study of economics is integrated with the study of political science, ecology, education, technology, sociology, psychology and culture, social science will not possess the knowledge and effective power to address the problems facing humanity today.***

*Economies operate at the interface between individual human beings, national and international markets, political systems, and the earth's ecosphere. Yet, as the most recent award of the Nobel Prize in Economics illustrates, it is today a highly fragmented field consisting of myriad sub-divisions, in which financial markets are increasingly divorced from the real economy, technological and industrial strategies are divorced from employment generation, income generation is divorced from income distribution, and economic growth is divorced from social welfare, and human activity is in conflict with the physical environment in which it occurs. **Today, there is an urgent need to reconnect disparate fields of thought in the social sciences to constitute an integrated science of society.***

*A simple paradox makes evident the inability of prevailing economic thought to meet the needs of humanity. We live in a world where unprecedented scientific knowledge, technological capabilities, organizational capacities and underutilized productive infrastructures co-exist side by side with a plethora of unmet human needs for food, housing, clothing, education, medical care, transport, communication and every other major and minor element that contributes to overall human welfare. In spite of tremendous advances in agricultural technology, one in every eight human beings still suffers from severe malnutrition. More than a third of the world's population still lives in dire poverty. How can economic theory make claims of market efficiency when the overall system is so blatantly inefficient in harnessing the enormous productive potentials of human beings to meet the essential needs of all its members? Does it mean there simply are no remedies to poverty and unemployment? **After two centuries of remarkable progress, must the bulk of humanity resign itself to a future of stagnation, mediocrity or decline?** Have we truly exhausted the capacity of human consciousness and creativity to support the further development of global society?*

The World Academy of Art and Science and the Club of Rome can lead the way in calling for a comprehensive reassessment and reevaluation of social science theory with the aim of laying the foundations for an integrated science of society and humanity founded on universal values and imbued with the effective power to fulfill our highest aspirations.

Orio Giarini

Ivo Šlaus

Garry Jacobs

SEED-IDEAS

Recognizing Unrecognized Genius

At the July 2012 Global Round Table conducted in Split, Croatia, co-sponsored by the World Academy of Art and Science, the organizers proposed introduction of TESLA, an acronym for The Earth Supreme Level Award, for unrecognized genius. This is an important and commendable initiative by philanthropist Hares Youssef which directly ties into the Academy's exploration of mental creativity and the limits to rationality.

While the emphasis of the TESLA Awards will be on contributions to science and technology, genius has an important role to play in all fields of human activity – including original contributions to thought, social innovation, business, the humanities, arts, culture and spirituality. Awards are needed to encourage contributions in all these fields.

“Genius unifies apparently disparate and unconnected phenomenon.”

We commonly identify geniuses in retrospect based on their actual achievements, as we marvel at the works of Tesla, Edison, Darwin, Einstein, Shakespeare, Beethoven and countless others. Awards will serve the greatest purpose if they help identify those who have the potential for genius, rather than waiting until their endowment is self-evident to all. This is far easier said than done, which is undoubtedly why we tend to celebrate success rather than encourage it.

This raises a fundamental question: How can we identify the potential for genius, so we can encourage it rather than waiting for it to manifest? The answer lies in understanding the most striking characteristics that distinguish the creative processes of genius.

One approach to identifying unrecognized genius would be to look for people who approach problems from a wider perspective. These are individuals with the capacity to transcend the limits of conventional thinking and the boundaries of prevailing rationality. Edward Lorenz, a mathematician disguised as a climatologist, exemplified this endowment when he became curious about the disorderly behavior of apparently simple systems and sensitive dependence on initial conditions. Lorenz discovered non-linear patterns of order where others saw randomness, leading him to postulate the Butterfly Effect, with vast implications for our understanding of phenomenon such as weather, lava flows, and gas flows. Former WAAS President Harold Lasswell made a profound contribution to the study of law by liberating it from the narrow confines of legislatures and judiciaries and viewing it in the context of evolving social and political processes and the affirmation of values by individuals and institutions in society.¹ Similar efforts are needed to comprehend the evolution of money, markets, and economy from a wider evolutionary social perspective.

“Today, there is an urgent need to reconnect disparate fields of thought in the social sciences – economics, politics, society and psychology. Unification of the social sciences and humanities can generate precious insights into the social process, such as the study of social evolution in literature.”

Genius unifies apparently disparate and unconnected phenomenon. Thus, Newton unified motion and rest, heaven and earth – the same laws govern celestial motions and phenomena on Earth. Maxwell unified electricity, magnetism, and optics. Einstein unified acceleration and gravity, space and time. Continuing Einstein’s work on unified theory, WAAS Fellow Abdus Salam unified electromagnetic and weak forces. Today, there is an urgent need to reconnect disparate fields of thought in the social sciences – economics, politics, society and psychology. Unification of the social sciences and humanities can generate precious insights into the social process, such as the study of social evolution in literature.²

The genius is one who sees the whole which is greater than the sum of the parts. Prevailing conceptions in economics have become so highly compartmentalized, quantified and abstracted, that economic science is divorced from the reality it seeks to explain. Thus, financial markets are studied as a thing in themselves, divorced from the underlying economy. Economy is viewed in isolation from the political system of which it is an inextricable part and the welfare of human beings it is intended to serve; and both are largely unrelated to the wider biosphere and environment which constitute our home on earth. Orio Giarini has stressed the need for a more comprehensive perspective in economics encompassing both the monetarized and non-monetarized economy, and both economic value and human utilization value in time.³

“*Genius has the capacity to discover the truth in opposite viewpoints and to reconcile apparent contradictions at a higher level.*”

“We need to encourage original thinkers to postulate radically new or improved social models to overcome the limitations of prevailing social, political and economic systems.”

Genius has the capacity to discover the truth in opposite viewpoints and to reconcile apparent contradictions at a higher level. The end of the Cold War marked the emphatic rejection of state communism. The recent international financial crisis is an equally emphatic indictment of market capitalism. As Nicholas Stern has emphasized, climate warming is also a proof of the failure of market capitalism, and as Ian Johnson has stressed, the very low employment rate is further proof. It is time to move beyond polarized, conventional Cold War ideologies. We need to encourage original thinkers to postulate radically new or improved social models to overcome the limitations of prevailing social, political and economic systems. In economics, we need those who can reconcile the human quest for security with the creative uncertainty of social potential.⁴

Science does not provide adequate understanding of ourselves and our world. Many very rational people reject the premise that human dignity, curiosity, love, idealism, the quest for truth and the urge for self-transcendence can be adequately explained by physical processes. Indeed, many physicists argued that there are unique laws of biology. The apparent dichotomy

tomy between science and spirituality has reached a dead end calling for fresh thinking and new hypotheses to more effectively reconcile the emergence of life and consciousness with the prevailing assumptions of science.

Genius sees profundity in simple facts. According to legend, Newton discovered the invisible law of gravity watching an apple falling to earth. Archimedes discovered his famous principle of fluid mechanics observing the rising water level in his bathtub. Mahatma Gandhi converted simple sea salt into a powerful weapon for non-violent revolution, calling on the Indian people to make salt in violation of tax law. We are still awaiting the genius who can cast the simple fact that trillions of dollars evaporated into thin air during the 2008 financial debacle into a comprehensive theory of money, wealth and economy.

Genius sees universal patterns repeating across different fields and levels of existence. William Harvey drew his inspiration for his theory of blood circulation by an analogy between the heart and the sun and the way the movement of air and rain emulated the movement of heavenly bodies. It was such a capacity that enabled Benoit Mandelbrot and other complexity theorists to discover self-similarity across scale – repeating patterns hidden in other patterns. Their remarkable insights have important applications to our understanding of the earth's surface, the surface of metals, and the anatomy of our lungs, capillaries and ducts. The quest for universal patterns applicable to the social sciences is a fertile field for new discoveries. The concept of micro-law, elaborated by WAAS Fellow Michael Reisman, traces the evolution of law to small acts by individuals in society, providing an important effort to link social processes at the level of the individual and society.⁵ There is fertile ground for new thinking, which is needed to establish parallels between social processes and development at the local, national and global level.

Genius is endowed with the capacity to perceive deeper levels of causality that escape conventional thinking. In *War & Peace*, Leo Tolstoy describes the real determinate of victory in battle as an intangible element he termed the “spirit of the army”. A literary genius, Tolstoy understood better than the military strategists the inspirational power Winston Churchill wielded to defend his nation during the Battle of Britain. When Franklin D. Roosevelt assumed the US Presidency in early 1933, he faced a financial and banking crisis of epic proportions. More than 6000 banks had failed, the public was in a panic, and citizens throughout the country were lining up to withdraw their funds before they too lost their savings. The situation defied remedy by the known conventional wisdom of economists and bankers. But FDR had a deeper insight into the social basis of economy. He perceived that the real problem was neither economic nor financial. It was a loss of confidence, fear. Quintessentially American, he was in tune with the spirit of his people and knew the answer lay with them, not with the bankers or politicians. He got on the radio and addressed the nation, telling his people that the “only thing we have to fear is fear itself.” Then he called on them to go back to the banks the following Monday and redeposit their lifelong savings. The crisis subsided. The banks were saved. Fortunately, for America, the people had the foresight to choose a leader who understood them better than the experts. Building on the insights of former WAAS President Harlan Cleveland and Fellow Jasjit Singh, deeper insights are needed into the linkage between rising social aspirations, employment, social unrest and terrorism.⁶

“Genius sees life in its profundity and totality.”

Genius perceives relationships between disparate, apparently unrelated facts. Sir Arthur Conan Doyle was a literary genius who portrayed with remarkable insight the working of genius through his immortal character Sherlock Holmes. Where the police placed all their confidence in the apparent evidence on the crime scene, Holmes always insisted on an explanation consistent with every facet of the people, circumstances and social context, human nature and the character of life itself. His perspective was all-inclusive. In one instance, he identified the criminal based on something that did not even occur – the fact that the dog did not bark signified to him that the criminal must have been known to the animal. Genius sees the whole picture.

Genius perceives universal truths of life and human nature. At the age of 21, Jane Austen whimsically began her great novel *Pride and Prejudice* with a profound insight: “It is a truth universally acknowledged, that a single man in possession of a good fortune, must be in want of a wife.” Shakespeare captured immortal truth in the lines “Whoever loved that loved not at first sight?” He understood that what is eternally valuable occurs instantaneously. “All the world’s a stage.” His perspective was universal. Genius sees life in its profundity and totality.

“**Genius sees immense opportunity where others see problems or nothing at all.**”

Differences exist between the expression of genius in thought and in action, so the criteria we develop for recognizing these varied expressions are likely to differ at least in some respects. Genius sees immense opportunity where others see problems or nothing at all. In the late 1920s, a Czechoslovakian shoe manufacturer named Tomas Bata dispatched agents to Africa and Asia in a quest for raw materials and markets for his products. His African agent cabled home reporting there was no market potential since few people wore shoes. Bata responded that his report has revealed there is infinite potential. Within a few years, Bata was running the largest shoe company in the world. A Bangladeshi college lecturer saw unlimited potential where commercial bankers feared to tread. Muhammad Yunus established Grameen Bank, establishing the prototype for the micro credit and micro finance industry, which now services tens of millions of people globally and is a powerful instrument for eradicating poverty.

Genius discovers the value of the opposite points of view and sees a relationship between opposites – competition and cooperation, love and hate, crisis and opportunity. At a time when rapacious, competitive capitalism was at its peak, Julius Rosenwald assumed the helm of a fledgling Chicago mail-order company in 1900 and built Sears into the largest retailer in the world by putting the satisfaction of his customers before the profitability of his business. He introduced the famed policy, “Satisfaction guaranteed or your money back,” which has now become a global standard in retailing. Human beings have always feared the machines they create, plagued by the recurring nightmare that their creations will eventually overtake and replace them. At a time when computerization was indeed taking over business and making people a dispensable resource, one young entrepreneur launched a revolution to make computers serve human beings. The famed, user-friendly Macintosh personal computer with mouse and graphic user interface was only the first step in the remarkable career

“A thorough study may identify a hundred such principles to serve as guidelines for identifying original genius.”

of Steve Jobs, who eventually built Apple into the most valuable company in the history of the world.

Genius discovers the untapped potential of linking and coordinating two or more fields of activity. The phenomenal achievements resulting from the advent of computers and the internet combine the power of technology with the power of social organization in many original, creative ways. The remarkable achievements of visionary individu-

als who founded new web-based social organizations such as e-Bay, Wikipedia, Facebook and Twitter offer additional clues to the principles governing genius.

These are just a few indices by which unrecognized potential genius may be discoverable at the formative stage when encouragement can help it blossom forth in rich creative profusion. A thorough study may identify a hundred such principles to serve as guidelines for identifying original genius.

Every sphere of human existence has progressed dramatically over the last 200 years — freedom, education, information, communication, technology, knowledge, and measurement have all increased exponentially. Then, is there any reason why the phenomenon of genius cannot similarly multiply? In the last ten centuries, the world may have discovered a hundred or more geniuses.

“By systematic effort to identify and encourage unrecognized genius, we may be able to discover a hundred or more potential geniuses every year.”

By systematic effort to identify and encourage unrecognized genius, we may be able to discover a hundred or more potential geniuses every year. As an Academy representing highest achievement in all fields of knowledge, the World Academy of Art and Science is eminently qualified to lead the way both in identifying the common criteria for genius in different fields of knowledge and walks of life and in identifying unrecognized individuals with high potential for augmenting human achievements.

We invite Fellows to help us expand the list of criteria for recognizing potential genius.
Send ideas to genius@worldacademy.org.

Ivo Šlaus and Garry Jacobs

Notes

1. Winston Nagan & Garry Jacobs, “New Paradigm for Global Rule of Law,” *Cadmus* 1, no. 4 (2012): 130-146.
2. Janani Harish, “Study of Individuality & Social Evolution in Literature,” *Eruditio* 1, no.1 (2012): 44-52.
3. Garry Jacobs & Ivo Šlaus, “From Limits to Growth to Limitless Growth,” *Cadmus* 1, no. 4 (2012): 59-76.
4. Orio Giarini, “Science and Economics: The Case for Uncertainty and Disequilibrium,” *Cadmus* 1, no. 2 (2011): 25-34.
5. Nagan & Jacobs, “New Paradigm for Global Rule of Law,” 139.
6. Jasjit Singh, “Revolution in Human Affairs: The Root of Societal Violence,” *Cadmus* 1, no. 2 (2011): 114-120.

Counter-Aging in the Post-Industrial Society

Several articles in *Cadmus Journal* have explored the meaning of “Wealth of Nations” at a time when the Industrial Revolution has given way to the Service Economy. In parallel, the *European Papers on the New Welfare* has been examining the lengthening of human life cycle as a decisive social and economic issue.

The lengthening of life cycle is a unique revolutionary phenomenon that will have a profound impact on contemporary and future societies. It will affect social, political and economic institutions to a far greater and deeper measure than is commonly perceived. Older people, those over 60, have always existed in history. But previously they represented a small minority. Today the lengthening of life cycle is a worldwide phenomenon with impact on the majority of the population.

From the “older” industrialized countries, it is extending its reach to the large majority of communities everywhere.

“Statistics based not on age but on the capacity to perform indicate, in fact, that in many countries, the population is not “aging” but “rejuvenating”.”

The lengthening of life cycle is often presented (wrongly) as the problem of “aging of population,” and as such, is regarded as an indication of the decay of the industrialized world. In fact, the “older” industrialized countries have the dual advantage of offering a longer (and better) life to their citizens while also evolving the social, economic and political adaptations required by the new demographic reality.

The definition of aging is based on the notion of older age. Considering the ability of each individual to be autonomous (in physical and/or mental terms), many studies and surveys indicate that on average a 60 or even an 80-year-old person of today corresponds in terms of the capacity for self-reliance to a younger person aged 15/20 living a century ago. Statistics based not on age but on the *capacity to perform* indicate, in fact, that in many countries, the population is not “aging” but “rejuvenating.”

In reality, we live in a “counter-aging society”. The lengthening of life cycle is clearly the result of economic and social advances that are strictly linked to scientific and technological advances. Biology, medicine, health control, nanotechnologies, nuclear applications, communication, instrumentations, etc. are producing significant advances for human health, welfare and well-being almost every year.

The lengthening of life cycle requires a redefinition of the period of ACTIVE life. I propose replacing the current conception of a single career of paid work with two different categories of activity: remunerated work on one side and unpaid or benevolent activities on the other. In fact, the two are complementary much more so in the post-industrial service economy than in earlier times.

This also implies an open possibility (and in many instances, the necessity) for extending the retirement age. When originally conceived, retirement age was based on the average age

of death. Today, at the time of retirement in many countries, life expectancy is 15 to 20 years more.

Satisfactory employment is for most people an important element of a healthy life. It needs to be based on an adequate foundation of education and the capacity to change the type of work as one advances in age.

It is also very important to promote part-time employment as a basic element for a well-balanced social security system. It is especially important for those working over 60. As it is now in some northern European countries, part-time pensions should be coupled to encourage part-time work.

Gradual retirement plans are also important.

These elements form part of the “four pillars system,” which is based on the three pillars of the Swiss system plus part-time employment, which is referred to as the fourth pillar.¹

Health improvement has been achieved at a great increase in costs. One could die almost for free in a not-so-distant past; now one has to pay for the possibility to control, eliminate or reduce the effects of all sorts of illnesses or accidents. We already spend a lot of money buying and using automobiles, which allow us to move (sometimes) faster. One day we will probably spend even more individually for our health maintenance, which might make our lives better and help us move faster. Spending on health is therefore producing added value for our lives. It increases the “Wealth of Nations.” From an economic point of view, retirement and health costs imply building financial capabilities by redistributive policies and personal savings.

This compels us to formulate a new definition of “capital” appropriate to the post-industrial Service economy. We need a perspective that recognizes the value of Human Capital across all age groups and seeks to optimize the development and utilization of this precious resource for human welfare and well-being. Indeed, all essential elements of economic theory need to be recast to reflect the realities of a human-centered perspective of economy and welfare.

For example, in the modern service economy, not all “value-added” measures reflect a real increase in the level of wealth. For instance, the cost of coping with pollution is registered as a positive contribution to GDP, whereas it has really resulted from a deterioration in the quality of life. At the same time, many developments in service functions and performance, e.g. enhancements in communication capabilities, add to real wealth and welfare much more than is reflected in the usual value-added measures, where lower costs of communication are recorded negative.

So also, the notion of productivity in a service economy needs to be based on performance over time (in a probabilistic system) rather than on production factor costs (in an equilibrium-based system) as in an industrial economy. A human-centered economics needs to also fully integrate ecological factors and reflect the impact of human activity on natural capital. All these elements need to be reflected in a new conception of the “Wealth of Nations.”

These issues raise fundamental questions such as: How and how far should we integrate health and pension costs and performances? How and how far should they be integrated with

the fiscal systems? How can we stimulate and improve the complementarity of the private and public sectors, the best solutions being determined by proper synergies between the two?

Two final considerations at the general political and socio-economic level: the first, as is always the case in human history, is a question of vision. How do we ensure that the lengthening of life cycle does not lead to social and financial disasters? Can we approach this prospect of increasing longevity as a fantastic positive opportunity to be exploited by adequate imagination, understanding and goodwill? This will entail a lot of work for those who dare.

The second consideration concerns the policies on which adequate and appropriate institutions, for instance, the European Union, will have to inevitably confront themselves. The European Union, in particular, needs to foster new initiatives towards integration. Social policies are clearly a major key for demonstrating concern about the daily problems of European citizens. There is large room for consensus to be reached and built on the issue of a new European Welfare. A more courageous initiative in this field is clearly necessary. Building European Welfare implies a productive comparison between the present differences among national systems, in order to promote the best solutions for all.

In this context, European countries, and in particular, the new countries from Eastern Europe, where in many cases the situation is more “open” than in the older members, could represent an important promotional reference group. There are great opportunities for research projects and proposals in this field.

The *European Papers on the New Welfare* contributes a number of important studies to pave the road to a complex, but challenging exploration of ‘New Welfare in the counter-aging society’. The World Academy of Art and Science wishes that politicians, students, and professionals and finally, every citizen whose life is directly concerned, may be inspired by the issue of welfare.

Trieste and its region could become a center of reference and excellence on all these issues. The age structure of Trieste’s population anticipates where the world is heading for in this area. Trieste has unique science and technological research patrimony (from the Science Area to the International Center for Theoretical Physics, and various others). It has an experienced infrastructure in the health (physical and mental) and education sectors. It has a large potential locally and at the level of the Friuli–Venezia Giulia region to promote industrial, service-based, social and cultural initiatives related to the development of the “counter-aging society.”

Orio Giarini

Notes

1. Four Pillars Newsletter, http://www.genevaassociation.org/Research_Programme/Four_Pillars_Pensions.aspx#anchor1

Seeding Intrinsic Values: How a Law of Ecocide will Shift our Consciousness

In April 2010, I proposed to the United Nations a law of Ecocide. My proposal has at its heart a fundamental intrinsic value – the sacredness of all life. When we value life, something fundamentally shifts in us; we look to the inner. It opens the door to self-reflection and when we do that, we look at the consequences. It is the same with law. Law that is premised on imposed values, such as profit and ownership leads to short-term gains without examination of the longer-term implications. Currently, our world is predominantly driven by laws that put profit first. So, how do we shift to a new way of being that prioritises intrinsic values? How do we shift away from valuing something for its price-tag to valuing something for its own sake, regardless of whether or not it has a pecuniary value?

“Currently, our world is predominantly driven by laws that put profit first. So how do we shift to a new way of being that prioritises intrinsic values? How do we shift away from valuing something for its price-tag to valuing something in and of itself, regardless of whether or not it has a pecuniary value?”

View the Earth as a thing and we commoditise it; put a price on it and we can buy, sell, use and abuse without consequence. View the Earth as a living being and we begin to care; when we care, we take responsibility and examine the consequences. These two very different approaches are echoed in law; the former is governed by contract and ownership laws, the latter governed by trust and stewardship principles. The outcomes are radically opposed.

The scales of justice have become imbalanced. They have become heavily weighted in favor of the former, where we have driven our economies to the brink by laws that put polluters above people and planet. The ripples of disharmony are being felt across the world and it is a system that cannot be sustained. We can, however, rebalance the scales. To do that requires a shift in the laws that govern us as a collective. In legal terms, that means creating new laws at an international level, laws that put people and planet first.

“The intrinsic value is the knowledge that we are all one.”

Our starting point is to close the door to systems that are life-destroying. When we do that we create a space to open a new door to systems that are life-affirming. Law that is premised on health and well-being of human and non-human life is our bridge to a new way of being. Nothing less than a whole new body of law is required; that body of law is already coming into being. Earth law.

In 1948, we closed the door to Genocide. When we did that we opened the door to human life. Now we can close the door to Ecocide. When we do that we open the door to life. Our cycles of concern widen from human to human, to human to non-human. The intrinsic value is the knowledge that we are all one. As humans, we are interdependent and interconnected to non-human life. Simply put, destroying the very land we walk on, we would destroy our ability to live in peaceful enjoyment. That applies whether or not we destroy without intention (such as through dangerous industrial activity, e.g. deforestation or nuclear testing).

My proposal is to create an international law of Ecocide. It is the missing 5th Crime Against Peace. By giving names to extensive damage, we can begin to heal.

'Ecocide is the extensive damage to, destruction of or loss of ecosystem(s) of a given territory, whether by human agency or by other causes, to such an extent that peaceful enjoyment by the inhabitants of that territory has been severely diminished.'

I have proposed that Ecocide sit alongside Genocide. By setting out this legal definition of the word Ecocide, I have created a provision which imposes a legal duty of care to place humanitarian and non-humanitarian life first. Implementation of the crime of Ecocide will stop the flow of destruction at the source and create a pre-emptive duty on corporate, governmental and financial activity to prohibit the mass damage and destruction to eco-systems. In international criminal law, we have a rule that is called the superior responsibility principle. International crime attaches itself to those who are in a position of superior responsibility, literally those who are in command — CEOs, heads of state and heads of financial institutions — to be held responsible to account for the decisions that are made at the very top level that can lead to, support or finance mass damage and destruction. By levying responsibility on persons, not legal fictional entities (i.e., a corporation), the cycle of destruction and accrual of silent rights (the right to pollute, the right to destroy) will die. By so doing, the protection of interests shifts from those few who have ownership to protection of all beings.

The importance of such a crime is that it criminalises any dangerous activity that gives rise to mass destruction. Nuclear testing and the use of nuclear weapons are the very worst kind of Ecocide of all. In August, I visited the town of Semey (former Soviet Union) to discover first-hand how a former nuclear testing ground is healing, with 100 other people. We met with young doctors and students who are being trained to deal with the second and third generation of people who are still suffering as a result of the tests back in the mid-1950s. Ecocide has long-term consequences.

Dr. Damien Short of the University of London and his team at the School of Advanced Legal Studies have recently unearthed some previously unseen UN documents that show that Ecocide was on the table to be an international Crime Against Peace. They are now undertaking a two-year research programme called The Ecocide Project to examine the background history of why the crime of Ecocide was removed from the precursor to the Rome Statute in 1996. Most tellingly, the draft document was entitled the Code of Offences Against the Peace and Security of Mankind. It listed Genocide, War Crimes, Crimes Against Humanity, Crimes of Aggression and Ecocide. The First 4 have become international Crimes Against Peace. Ecocide is the missing 5th Crime Against Peace.

I am seeking to have the Rome Statute re-opened for amendment. Next steps are to find a leader to speak out in support of an international law of Ecocide; by criminalising mass destruction at the international level, the door can be closed once and for all not only to nuclear testing and nuclear weapons but to all dangerous industrial activities that cause Ecocide.

My work is to speak out about the law of Ecocide; however, one lawyer is not enough. This requires leadership at all levels — leadership that puts people and planet before profit; that which accepts the moral duty we hold in sacred trust for future generations. We have done it before when we closed the door to Genocide; now civilisation is ready to take the leap. A law of Ecocide is the bridge that makes it safe to walk across to the new world.

Polly Higgins, International Environmental Lawyer and Barrister

Crises and Opportunities: A Manifesto for Change

Ian Johnson, Secretary General of the Club of Rome;
Fellow, World Academy of Art and Science

Garry Jacobs, Chairman, Board of Trustees, World Academy of Art and Science;
Vice President, The Mother's Service Society

Abstract

Piecemeal fragmented strategies cannot address the pressing challenges facing humanity today. Economic theory has to be radically reinvented to squarely face the reality of rising unemployment, widening inequalities, growing ecological threats, frustrated social aspirations and unmet human needs. Monetary and fiscal policies are too crude and insufficient to steer the essential change of course required to address multidimensional demographic, ecological, economic, political and social crises. New values are needed to guide policy formulation and new institutions are needed to support peaceful social evolution and inclusive, equitable development in an increasingly globalized and interconnected world.

If challenges are opportunities, then never before have the opportunities been so great; for never before has humanity faced challenges comparable in magnitude and complexity to those that have emerged in recent times. Today, we stand both witness and participant in a multi-dimensional global crisis impacting all major aspects of global society, imposing severe constraints on our ability to meet the growing needs and rising aspirations of the human community in an effective, harmonious and equitable manner. The signs of deeper crisis are most evident at a number of specific pressure points:

- **Ecology:** Deepening ecological crisis driven by unbridled economic growth, soaring energy consumption and mispricing of natural capital, generating serious concerns over anthropogenic climate change, severe damage to terrestrial and ocean biodiversity, increasing water scarcity, rising energy costs, and depletion of resources.
- **Employment:** Structural unemployment crisis of ominous proportions driven by massive demographic changes within and between countries, pricing and incentive systems biased toward investment in technology and physical energy over human capital, and a global realignment of economic activity, leading to the alienation of growing numbers of youth and chronically unemployed older workers.
- **Finance:** Persistent and recurring financial and banking crisis driven by inadequate regulation and oversight, based on unquestioning faith in the efficiency and

effectiveness of unfettered markets, leading to a growing diversion of financial resources for speculative, non-productive purposes and undermining the stability and growth of the real economy.

- **Food:** Periodic food commodity crisis driven by rising food prices, declining efficiency and productivity, depletion of scarce soil and water resources, and diversion of arable lands to non-food energy crops.
- **Poverty:** Enduring poverty crisis in both developing and developed countries driven by a growing divorce between economic growth and human welfare, and aggravated by rising levels of unemployment, income inequality, food and energy prices.
- **Security:** And finally, as a result and aggravating factor, an emerging crisis in social stability, cohesion, physical and social security arising from the widening gap between human aspirations and available opportunities, leading to alienation, social unrest, crime and violence, and serving as fertile soil for the polarization of society and rise of fundamentalism.

These pressure points share several striking features. First is their mutual interdependence. Each magnifies the severity of the others and is in turn aggravated by all the others. Second is their common origin. Each can be traced back to similar underlying factors and “root” causes. This is the major reason why each of these multiple crises defies effective remedy by piecemeal strategies. The true source of the problem lies at a more fundamental level in the present value system and structure of modern society, and will only lend itself to permanent remedy when understood and addressed from a deeper and wider perspective. Third is the fact that they are all anthropogenic in origin. All are the expression of human ideas, values and actions, not inalienable laws of Nature, which means that all can and can only be rectified by a change in our ideas, values and actions.

A better appreciation of root causes will provide a platform for insightful debate and more effective remedies. Approaching the multiple crises from a common perspective and addressing multiple pressure points at their common underlying roots will lead to solutions that are both more effective and more lasting than those resulting from a fragmented approach. Only then can we hope to reconcile these complex economic, ecological, social and political factors and to forge a coherent strategy to promote security and welfare for all human beings, present and future.

With political leaders, the media and the general public preoccupied by the intensity and immediacy of the financial, economic and employment crises, concern with the potentially catastrophic ecological crisis has receded from the public mind. By addressing the whole gamut of issues in this larger framework, environmentalists can redirect attention to the underlying factors that are the root cause and only viable remedy for the preservation of our natural systems.

An integral perspective constitutes the starting point, but in order to translate it into usable, practical results, we need to examine the ruling ideas and values that govern the present system, the theoretical constructs and policy framework on which it is based, the social institutions through which it functions, and the structures and laws through which

it is governed. These constitute the essential sources of the current problem as well as the principal instruments for building a better world. Striving to formulate a broad conceptual framework for resolving the global crisis may appear far removed from the everyday problems and available policy options, but ultimately, it is an essential step in defining a viable change of course that will lead us out of the present fog of confusion into a better future. The objective of this paper is not to provide all the answers, but rather to present a diagnostic framework, a road map, a manifesto for change, and to highlight key points where systemic changes can and should be made, which in combination can radically alter future outcomes for the good of all humanity.

“Ideas possess a transformative power. Social evolution is propelled by the perception of new possibilities, the formulation of new ideas and the adoption of new values which release and channel human energy for higher levels of accomplishment.”

1. Ideas can Change the World

The current crises confronting humanity today reinforce the importance of values as the essential basis for global social progress. Unregulated markets that serve the few at the expense of the many, undemocratic institutions of global governance, rising levels of inequality, unsustainable exploitation and destruction of our natural resource base, rising alienation of human capital from productive employment and rising levels of social instability are signs of a social fabric increasingly divorced and insensitive to the welfare and well-being of large sections of humanity. At the root of the multiple crises confronting humanity today is a crises of values that must be resolved before there can be any hope of lasting solutions to the problems facing humanity.

The history of human development is commonly described in terms of advances in technology, but this is an overly-simplified view that disregards other transformative agents of change. The catalytic impact of the Club of Rome’s report, *The Limits to Growth*, on global awareness of the environmental challenge is sufficient proof that

ideas can change the world. Ideas possess a transformative power. Social evolution is propelled by the perception of new possibilities, the formulation of new ideas and the adoption of new values which release and channel human energy for higher levels of accomplishment. Agriculture, specialization of labor, property, markets, cities, money, banking, democracy and the internet are examples of new ideas that have transformed the way we live and work together. Human political, economic and social rights are a catalog of values which have radically altered the fabric of social relationships, leading to the progressive emergence of the individual as the pioneer and creative leader of social development.

Values are not merely utopian ideals. Values define us and the institutions we create. The power of values derives from the fact that they contain the quintessence of wisdom acquired by successive generations regarding the essential requirements for higher levels

“*Values are not merely utopian ideals. Values define us and the institutions we create.*”

“*The time is ripe for a new narrative, new metaphors and a new storyline for humanity.*”

of human accomplishment. Thus, it has taken millennia for humanity to realize that freedom creates the most dynamic environment for the emergence and productive expression of human capacities so essential for development, creativity and prosperity. At the same time, it is values that define the balance between the rights and responsibilities of

the individual and the collective, so essential for social stability, productivity, harmony and continuity. Values define the balance between present and future generations and the place of humanity as an integral part of the natural system.

The time is ripe for a new narrative, new metaphors and a new storyline for humanity. We are advised to seek the remedy to the prevailing social ills not merely in technological fixes, but in a re-examination of the fundamental ideas and values on which the current system is based. The limits we confront are mental limits – limits to our perception, understanding, imagination, idealism and values.

A consideration of values compels us to ask seminal questions: What kind of world do we want to create for present and future generations? What are the fundamental premises and values on which it should be based? Any serious attempt to formulate a more coherent and cohesive social framework should begin by examining the values that have driven human progress over the last few centuries and by identifying emerging ideas and values with the power to break the limitations of existing structures and forge a more effective synthesis of human capabilities and resources.

2. Need for New Theory

Adoption of new values compels us to reject the Newtonian conception of economic theory based on intractable laws of nature. The first economists were moral philosophers seeking to design a better social system to meet human needs, not scientists in search of some immutable laws of economy. Economy is a human activity intended for a specific purpose. Production of things, application of technology, multiplying money, and even growth itself are merely means to an end, not ends in themselves. There can be only one legitimate aim of economic activity to promote the maximum welfare of all human beings over time. We need to re-examine current economic theory to see where it fails to promote optimal human welfare and how it can be altered to better suit human needs.

The laws of economics are governed by human values, choices, policies and institutions which can and do evolve continuously over time. Current economic concepts and theories date back to the beginning of the Industrial Revolution and were serviceable during a period when increasing production was the primary means for overcoming scarcity and human want. Continued reliance on outmoded ideas poses a serious threat to the future of humankind.

A triple divorce has disconnected economy from the fundamental role it is intended to serve. First is the widening rift between production and employment. The aim of raising labor productivity has given place to the obsession with eliminating labor altogether from the production process, creating a world with ever growing production capacity, while severely limiting the number of people with the purchasing power necessary to avail of it. Second

is the rift between finance and economy, a divorce of financial markets from the real economy, which they were originally intended to serve. The consequences of this separation have been growing for decades.

“*New economics must be founded on rational thought rather than fundamentalist dogma.*”

Over the past forty years, the world has been wracked by more than 400 financial crises, destabilizing economies and impoverishing people around the world. Money and financial markets have become ends in themselves, channeling capital into speculative investments and depriving the real economy of vital resources. We need to recall that the fundamental purpose of financial markets is to support the real economy and promote human welfare.

Third is the rift between economy and ecology. The blind pursuit of unbridled growth, more production and consumption without regard for the consequences is like a cancer, rapidly destroying the ecological foundations on which human life depends.

New economics must be founded on rational thought rather than fundamentalist dogma. The neoliberal philosophy that underlies efficient market theory is just another name for the law of the jungle. Our aim is not mathematical accuracy but human welfare. The validity of economic axioms must be judged solely in terms of their capacity to promote real-world benefits for human beings. How far economics has strayed from its original and valid purpose is indicated by the fact that two Nobel prizes have been awarded for theories applied in computerized trading programs responsible for destabilizing financial markets and disrupting the entire world economy. The only meaningful measure of efficiency is that which most effectively utilizes available material and social resources to meet the needs of all human beings, present and future.

Economics is presently based on a false system of accounting that assumes all growth is good and all forms of growth are equally good. Current measures regard the economic benefits of war, pollution, crime, rising oil prices, terrorism, epidemics, natural calamities, water scarcity and deforestation as equivalent to activities that promote better nutrition, housing, education, healthcare, physical comforts and conveniences, social harmony, recreation and enjoyment. Nations today are blindly groping, as the medieval traders of Europe did before the invention of double-entry bookkeeping enabled them to clearly distinguish credit vs. debit transactions. Is the world truly richer today because it spends \$60 billion a year on bottled water, largely as a result of increasing concern regarding the availability of good-quality drinking water? By that logic, pricing clean air as a result of growing air pollution would make us richer still.

Newton's laws of motion may be divorced from human notions of value, but the laws of economy are firmly based on the notion of value and the process of valuation. Prices reflect the perceived value of materials, time, people, products, leisure, knowledge, power, status, convenience and enjoyment. Here too, we are employing false measures. It is highway robbery to price water, oil and other non-renewable resources at the financial cost of extracting them, to price forest timber at the cost of cutting it down, unmindful of the consequences; or to price nuclear energy without regard for the full risks of catastrophic events such as

Fukushima, and the full cycle investment costs to society of managing decommissioning and waste disposal.

The concept of public and private goods is based on the idea that the individual and the collective have different terms of reference and standards of value which need to be balanced and reconciled. What serves the one may be to the detriment of the other. Maximizing technology and minimizing labor or diverting financial resources from the real economy into speculative monetary instruments may appear to be of good value to the businessman, but may generate high costs to society in terms of unemployment, income inequality, social welfare expenditure, crime and social alienation. Depleting non-renewable, fossil fuel energy resources may appear to be of good value to industry, but may generate high environmental costs to global society and future generations.

Equally important is the need for a reassessment of the role of money as a social organization and of monetary policy as an instrument for economic regulation. Money is a unique human invention, which like language and the Internet, facilitates exchange, interrelationships and productive collaboration between human beings. But current monetary policy and monetary regulation are veiled by esoteric doctrines, sacred principles and opaque decision-making that obscure real world analysis and open debate regarding their medium and long term impact on human welfare. Econometric models based on mathematical algorithms cannot be relied on to choose what is best for humanity. The validity of the oft cited tradeoff between price stability and employment must be open to discussion and empirical assessment. The need for new values and new thinking must also penetrate this shadowy domain.

A major shift is needed to re-engineer our economies: questioning the assumptions that underlie current economics; altering the system of metrics by which we assess progress to ensure that our valuations reflect the real contribution to human welfare and embed the full costs, direct, indirect and inter-temporal; eliminating the irrational, unsustainable, inequitable and often uneconomic ways in which we deploy, utilize and consume resources; and changing the policies by which we establish the relative prices of various forms of capital – natural and social. We need to review our concept of growth and revamp growth models to ensure they meet the needs of both present and future generations, with particular attention to the future of work and the maintenance of our high-value natural systems.

Most important of all, we need to dispel the misguided belief that we have run out of options and are truly helpless against the intractable laws of nature. The limitations we face today are limits imposed by our values and concepts, not the limits of human potential for accomplishment. A careful analysis of present assumptions supports the view that new theory can lead to the development of far more effective systems for meeting human needs. The criticality of circumstances will compel us to implement radical changes sooner rather than later – **the sooner the better**.

3. Employment: An Urgent Priority

Nowhere is the need for new values and new theory more apparent than with regard to the growing problem of unemployment. Broadly defined, employment and jobs encompass all forms of meaningful, remunerative work – formal and informal, full and part-time, whether engaged by others or self-employed. Similarly, unemployment, underemployment

and marginal subsistence activities encompass all forms in which precious and perishable human resources in both developing and economically advanced countries remain idle or underutilized for want of opportunities for gainful work. Human resources are a perishable commodity, which degenerate rapidly when left unutilized. Underutilization of human resources represents a huge social cost and poses a serious threat to peace and social stability, nationally and globally. It is only by addressing this issue promptly and effectively that we can hope to attract public attention to the serious environmental issues confronting humanity.

“A human-centered theory of economics must place people first, while fully recognizing that humanity forms an integral part of the natural system.”

While the consequences of financial instability are more visibly reflected in the media and urgently debated by politicians, and while the consequences of climate change may be far more catastrophic to humanity and life on earth, rising levels of unemployment pose the greatest near term danger to the welfare of humanity and the stability of global society. According to ILO, more than 200 million people are unemployed globally, including 75 million youth. This figure grossly underestimates the real level of unemployment and underemployment which probably exceeds one billion or a third of the global workforce. Official figures for youth unemployment range between 20% and 30% in most OECD countries and are over 50% in Greece and Spain. These figures will continue to rise as deficit reduction strategies cause economic contraction in many countries. Over the next decade, the working-age population of G20 countries will increase by 440 million. In order to generate global full employment, the world would need to create 600 million new jobs within a decade.

Recent trends tell us this is improbable. A pessimistic mindset tells us it is impossible. Yet, the evidence of history contradicts these conclusions. We must reject the false notion that full employment is not feasible. The past sixty years have been the period of the most rapid population growth in world history. During this period 4.2 billion people were added to world population, a growth of 164%. Yet, during the same period total global employment increased by 175% and average levels of unemployment remained relatively constant. The gloom and doom are real to our minds, but they are not an inevitable reality. At present, there is no coherent theory of employment that adequately explains this remarkable achievement. Thus, new theory is essential.

A permanent solution to the global employment challenge demands a radical change in ideas and values. We must recognize that people — human capital — are the most precious of all resources which must be preserved and enhanced at all cost. People are not only the source of all the ideas, products, technologies and discoveries that have directed human development; they also constitute the ultimate purpose of that development. A human-centered theory of economics must place people first, while fully recognizing that humanity forms an integral part of the natural system.

Employment occupies a unique role in a market economic system. As the right to vote is the principal means by which people exercise their political rights in democracy, employment is the principal means by which people exercise economic rights in a democratic market economy. Employment is the economic equivalent of the right to vote. People can survive

“Banning speculation can redirect trillions of dollars into job-creating investments in the real economy.”

without voting, but not without a means for their sustenance. The right to employment must be constitutionally safeguarded. As Indian Prime Minister Indira Gandhi told during the first conference on Environment and Development in 1972, poverty is the worst form of pollution. And poverty is inextricably linked to the absence of remunerative employment opportunities. Moreover, employment is also essential for social stability. The unemployed are the main source of new recruits for social unrest, organized crime, fundamentalist groups and terrorism.

Recognizing the urgent need to address the global employment challenge, ample means are available to accelerate job growth once we are willing to challenge and reject outmoded assumptions and policies. Policies must be reversed which tax employment and subsidize unemployment needs, incentivize blind adoption of labor-saving technologies and energy-intensive processes, and subsidize fossil fuel and water extraction by wrong pricing. Banning speculation can redirect trillions of dollars into job-creating investments in the real economy. Raising the mandatory minimum level of education globally is a wise investment to upgrade the quality of human resources, while creating new jobs in education and reducing the flow of youth into the workforce. Revising the system of higher education to combine education and work over an extended period and drastically revising curriculum to enhance the quality and relevance of education are also essential measures. These and many other initiatives illustrate the fact that full employment is an achievable goal provided we are committed to achieving it.

4. Rights, Social Equity & Fairness

Economic progress for all was a basic tenet of the post-war decades. But over the past quarter century, we find an increasing proportion of income and wealth being concentrated among a smaller and smaller proportion of the population. The top 20% of the world's population possessed 33 times more income than the poorest 20% in 1970, 45 times more in 1980, and 74 times more in 1997. The financial assets held by the top 0.1% of humanity are equivalent to the entire world's GDP. The level of inequality is rising in two out of every three countries. This trend is clearly unsustainable and contrary to all rational conceptions of justice and social equity. Where is the rationality or even the efficiency in such a grotesquely lopsided arrangement? What sort of a society are we heading for?

“We must learn how to balance the constructive role of inequality as a motive power for progress with the growing demand of the aspiring masses for a fair share in the benefits of technological development and in the use of the global commons.”

At the same time, rising social aspirations fueled by education and the media are increasing the demands and raising the frustration level of those who are left out, creating a structural weakness in the very foundations of social stability. Changes in average income levels tell us little. The tail ends tell the story. A \$1000 increment in income for the wealthy

becomes a further stimulus to speculation, while a similar increment for the poor translates into real economic growth and job growth. As a difference in voltage propels the flow of electrons through a wire, differences in level of achievement can serve as a positive impetus to social development; but beyond an optimal level, the widening gap between rich and poor becomes a growing source of alienation, social unrest, fundamentalism and violence, acting like a short circuit that sparks a conflagration. The insatiable quest for unlimited acquisition and ludicrous indulgence in extravagant consumption cannot be allowed to endanger the future generations of humanity and the well-being of our planet. We must learn how to balance the constructive role of inequality as a motive power for progress with the growing demand of the aspiring masses for a fair share in the benefits of technological development and in the use of the global commons.

“No achievement stands on its own strength. Every further advance in technology and enterprise is based on a foundation of past discoveries, inventions and innovations built up over decades or centuries. That cumulative knowledge rightly belongs to all humanity.”

Those who clamor that higher taxes for the rich rob the competent of the just rewards for their superior capacity and hard work overlook the completely arbitrary norms by which society presently allocates the profits of enterprise. No achievement stands on its own strength. Every further advance in technology and enterprise is based on a foundation of past discoveries, inventions and innovations built up over decades or centuries. This cumulative knowledge rightly belongs to all humanity, like the global commons on which we all live. It is right that the distribution of rewards is proportionate to the real relative contribution. Our values must evolve to keep pace with the enormous power unleashed by humanity’s cumulative achievements. Greater power for accomplishment brings with it greater responsibility to disseminate the fruits of that power wisely and fairly.

5. Institutions

We need also to examine the social institutions by which ideas and values are translated into actions for human accomplishment. Institutions are the means by which society organizes itself. Institutions are the channels by which human energies are directed by ideas and values to achieve goals. Institutions include not only the formal and visible organizations we utilize for defense, education, production, social welfare and enjoyment. They also encompass a wide array of intangible and invisible arrangements – customs, laws, rules, systems and habitual ways of life – that determine how activities are carried out, coordinated and integrated with one another. Society may best be conceived as a richly woven fabric of interrelationships linking people, places, activities, organizations, sectors and nations with one another in space and time. Over millennia, this fabric has evolved very gradually, one thread at a time, layer upon layer, physically, socially, mentally and culturally. Taken in totality, they represent the collective know-how of society, the technology of social organization. The history of technology reveals a virtually unlimited progression of discoveries and developments, each becoming the foundation and bedrock for constructing higher level capabilities. So too,

“Finance and employment are subsets of economics; economics is a subset of society, and society exists and thrives in harmonious relationship with nature.”

the technology of social organization has the potential for unlimited innovation and development.

Central among these institutions are property and property rights which date back to Roman times and have failed to keep pace with the radical evolution in social values, technology and resource consumption over the past half century. New concepts and forms of ownership are needed that protect communal and global ownership of resources, spatially and over time, while simultaneously ensuring that returns are shared in an efficient and fair manner reflecting the nature of ownership.

Society is an integrated organization of human activities, which does not respect the arbitrary divisions and boundary lines imposed by our minds or theories. Finance and employment are subsets of economics; economics is a subset of society, and society exists and thrives in harmonious relationship with nature. The efficacy of any social organization depends on its capacity to release and channel human energy for productive purposes. That is only possible when sufficient freedom and opportunity are provided to all members of society to help them develop and express their innate potential within a structured framework that harmonizes private self-interest with public good. Freedom for initiative and regulation to ensure cooperation and fairness go hand in hand. A century ago, capitalism acquired a social conscience to meet the perceived threat of socialism and arrived at a balance between public and private good that resulted in unprecedented prosperity in OECD countries. The collapse of communism symbolized by the fall of the Berlin Wall in 1989 coincided with a resurgence of neo-liberal conceptions that have become a root cause of the current crises. New theory must restore the balance that optimizes the welfare and economic security of all, while giving scope for the creative contributions of each. There is a need to develop a whole range of hybrid goods which, like insurance, serve simultaneously the interests of both the private citizen and society-at-large.

If economics is off-mark, then the institutions it has spawned, supported and protected must also be placed under scrutiny. We have already noted that the divorce between finance and economy is a notable characteristic of the current crisis, one which has severely eroded public trust in our economic institutions. Urgent efforts are needed to reverse the trust deficit arising from the functioning of markets, particularly in the financial sector. The philosophy enshrined in the Washington consensus has promoted unfettered and unregulated markets, at a time when the public good component of economic activities has never been larger or more obvious. Our inquiry needs to examine the options for new institutions and new rules that can better reflect the public good nature of economics, as well as provide the longer term protection of those assets humanity will need to rely upon for generations to come.

6. Governance

New institutions will, in turn, require more enlightened and effective forms of governance, new rules to play by and public policy systems that are far more credible than they are today. At the national level, we cannot build a stable foundation for the future based on

nominally democratic institutions that serve the vested special interests of the elite. That is plutocracy, not democracy. At the international level, the failure of the United Nations system to deliver in many areas exposes the inherent insufficiency of a nation-centric system dominated by a few privileged, powerful nations in the name of democracy, at the expense of other nations and the global community. These failures compel us to think through new paradigms, new alliances and new modes of securing the legitimate rights of nations, individuals and collective humanity.

The issue of democratic governance is complicated by several factors. First is the ideological confusion between freedom and the unfettered pursuit of self-interest, which regards all forms of regulation as an infringement on democratic rights. In both politics and economy, freedom can only exist when safeguards are in place to protect the whole society against the misuse of power, all forms of power – monetary and social power as much as political and military power, the power of the majority as well as that of an elite minority. Second is the tendency of parliamentary democracies to address the narrow, short-term, self-interested concerns of voters at the expense of wider, longer term issues. Democracies will have to find ways to more fairly represent the interests of future generations. Third is the challenge of instituting a democratic system of global governance, when nations that most loudly proclaim their commitment to democracy at the national level have serious misgivings about extending the same principles to the global level, as illustrated by the resistance of the five permanent members of the UN Security Council to democratize the UN's most powerful organ. Fourth is the recognition that national governments represent only one of the groups of actors that make up the global community. Even in so-called democracies, national governments are often more representative of money power than the real interests of their own citizens. Therefore, the evolution of global governance will need to find ways to represent the interests of other important constituencies. These challenges can and must be overcome in order to fully address the common problems facing humanity.

“*Today's multidimensional crisis is a result of the fact that global society has expanded far more rapidly than the institutions required to govern it.*”

The process of globalization has reached a critical juncture. All of the crises referred to in this paper are essentially global in nature and cannot be effectively addressed by each nation in isolation from the rest. This is obviously true of the financial and ecological crises, but it is also true of the crisis in employment which is increasingly subject to factors beyond control by national governments. Today's multidimensional crisis is a result of the fact that global society has expanded far more rapidly than the institutions required to govern it. Today's financial and economic crisis is not a repeat of the national level crisis of the 1930s, but rather a playing out of a similar scenario at the global level.

Yet, we still cling to outmoded concepts and models which are increasingly irrelevant, such as a narrow interpretation of sovereignty founded on the right of nation-states to self-determination, disregarding the equally legitimate rights of lateral communities made possible by technological advances and of the global human community that is so rapidly coalescing. A strictly state-centric system of governance is no longer viable in a world with

so many legitimate voices and cross-currents of relationship. These changes necessitate evolution of new systems for global governance and new principles of global public policy.

7. The Big Question

Incremental tinkering with the present system in one or all major dimensions may or may not generate some temporary relief and buy a little time, but definitely will not make our problems disappear. If they recede for a time, they will return with greater intensity until we consent to address them at their roots. Business as usual is not an option. Adding a few “bells and whistles” will not work.

At the same time, we should not underestimate humanity’s inexhaustible capacity for creative ingenuity, resourcefulness and adaptive change. But, before we can bring about effective change, we must know where it is we want to go and what kind of world we want to create for ourselves. Thus, the inquiry must begin with formulation of the values on which our future should be based.

“There is something grossly inadequate and perverse about a system with so much power and such visible incapacity to meet human needs. These grossly apparent failures are sufficient confirmation that a better system must be possible and that the world is ripe for new thinking.”

This should be followed by asking a fundamental question which is usually overlooked in our haste for quick fixes and piecemeal remedies: *Is there any possible way for us to reformulate and reconstruct global society in a manner that is more conducive to the security, welfare and well-being of all human beings and fully compatible with the natural systems on which we depend?* Intuitively, we must answer this question with an emphatic affirmation. There is, there must be, a better way than what we have today. It is inconceivable that a species which has emerged from the jungle, built cities, sailed the seas and the skies should have reached the end of its evolutionary potentials.

We live in a world of paradoxes: unprecedented abundance lives side by side with unmitigated poverty. Billions of people remain at subsistence levels, while global financial assets have multiplied from \$12 trillion to \$216 trillion in three decades, and are now equivalent to nearly four times the global GDP. The world possesses the surplus capacity to produce every variety of goods, yet billions lack the resources to procure them. Hundreds of millions of able-bodied willing workers are without employment opportunities, more than a billion are underemployed, while urgent needs remain unfulfilled for more and better food, clothing, housing, education, health care, communications, transportation, and other essentials of life. The most advanced technologies co-exist alongside the most primitive living conditions. There is something grossly inadequate and perverse about a system with so much power and such visible incapacity to meet human needs. These grossly apparent failures are sufficient confirmation that a better system must be possible and that the world is ripe for new thinking.

8. Is Radical Change Possible?

"It is true that humanity clings to the past in spite of repeated failures. It is also true that failure and crisis have proven to be a marvelous instrument for education and motivation for change."

The doubling of world population between 1650 and 1800 prompted Thomas Malthus to predict that humanity would be forever caught in a vicious cycle of unbridled population growth, poverty and famine. Malthus' analysis was correct, but his prediction did not come true, because he could not anticipate the multidimensional social revolution which radically altered circumstances in the following decades. The technological developments that ushered in the Industrial Revolution only partly explain what happened. Equally important was the opening up of new lands in North America, the dynamism unleashed by the spread of democracy following the French Revolution, and the mechanization of farm production and higher levels of productivity, which reduced dependence on child labor and large families. In addition, declining death rates, the spread of general education and rise of the Middle Class shifted emphasis from the number of children to the quality of their upbringing. These and other factors made possible a seven-fold increase in population between 1800 and 2000, while at the same time real per capita income multiplied twelve-fold.

Forty years ago, *The Limits to Growth* generated awareness of another pending crisis threatening humanity. The report was not a prediction of dire calamity or even of an end to growth, but it clearly signaled the coming end of the old model of natural resource-intensive, industrial development. Since then, the landscape has been altered by the emergence of the knowledge-based service economy, the birth and growth of the Internet, technological advances in energy and miniaturization, globalization of trade, rising levels of education and rising social expectations among the aspiring masses in developing countries. Some of these factors mitigate while others aggravate the challenges posed by growth. But, they all point to the fact that society is evolving so rapidly that it is worthwhile envisioning a new framework which reconciles social aspirations with economic and ecological limits.

It is important not to underestimate the power of vested interests and agents of the status quo. The world is the way it is today because many people benefit from the current system and distribution of power and would like it to remain just as it is. The current values, theories, institutions and power structures have ardent advocates. At the same time, it is important not to underestimate the capacity for radical change. Monarchy did not disappear because monarchs decided they preferred democracy, but because the masses of ordinary people no longer consented to be governed by and for the benefit of a small elite. After spreading to encompass more than half of humanity, the European colonial empires disappeared within a single decade when the aspiration of 45 oppressed nations awakened to the call of freedom and demanded self-determination.

It is true that humanity clings to the past in spite of repeated failures. It is also true that failure and crisis have proven to be a marvelous instrument for education and a powerful motivation for change. Ideally and hopefully, we can change without the need for crises and challenges to spur us to change our way of life. But either way, we need first to be prepared

with a set of alternative ideas to be adopted when the time is ripe. Our conviction is that if we fully prepare ourselves intellectually, we can make that time come now.

9. From Revolution to Evolution

“*A social revolution is already afoot. If government does not solve the problem, people will.*”

When Franklin D. Roosevelt assumed the US presidency in 1932, he faced a multidimensional crisis that had defied resolution by existing dogma or incremental policy changes. Faced with a banking crisis that had already destroyed 6000 American banks and an economic crisis that had displaced 25% of the workforce and reduced GDP by 50%, he was compelled to embrace new ideas, adopt new

values, establish new institutions and alter radically the role and responsibility of government for promoting human welfare. Growing fear of the compelling attraction of communism for the masses compelled capitalism to adopt a human face. In a country founded on principles of free market capitalism which regarded all forms of socialism with anathema, the New Deal was nothing short of radical social revolution. The dire suffering imposed by an economic collapse during the Great Depression compelled liberal ideologues to embrace policies contrary to the very core of their beliefs and established the foundation for a half century of unprecedented prosperity.

Those who doubt the capacity of humanity to make the necessary changes fail to realize the real magnitude of the multidimensional crisis that is emerging and cling to the belief in our collective capacity to muddle through. This is a grave error. A social revolution is already afoot. If government does not solve the problem, people will. Long before climate change floods our coast lines, armies of unemployed youth, excluded poor and alienated elderly will, like a tsunami, storm the bastille of our most sacred assumptions and entrenched privileges. The Arab Spring and Occupy Wall Street movements that have sprouted up in over 1000 cities in 82 countries around the world are only sparks of a coming social conflagration that reflect the deep erosion of faith in our institutions and way of life. In this modern communications age, the gap between rising social expectations and growing inequalities is straining the fabric of global society. The storm of protest and unrest will relentlessly persist until either we change the rules to accommodate these frustrated aspirations or it tears the present structure of selfish greed and utter folly into shreds. When it does, it is not going to honor anyone's theoretical premises or self-satisfied convictions.

As each of these pressure points gathers steam, the force compelling change will only grow greater in both urgency and intensity. Each of the separate strands of crisis has its own in-built multiplier effect. In combination, they will generate a momentum that may build gradually, but once it crosses the tipping point, it will rise exponentially. Once an event crosses a crucial transition point, the effort required to reverse the direction also multiplies. The 2008 financial crisis is proof of the fact that once public confidence is eroded beyond a certain point, the spill-over effects are extremely difficult to contain and reverse. Confidence nurtured over decades can vanish in a moment.

This is not a prediction of doom, but a call for immediate and concerted action to embrace the values, formulate the new ideas and put in place the next layer of governance structures required to cope with the challenges posed by humanity's remarkable achievements during the 20th century. We have the capacity by the strength of our ideas to convert the approaching revolution into rapid social evolution. Our call is revolutionary in spirit, evolutionary in implementation. The challenge we face is to seize the opportunity for change, to seize the century that lies waiting for us.

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A Call for Ideas

Ideas that can Change the World

Throughout history, new ideas have had a transformative impact on humanity, resolving ancient mysteries, uncovering new creative powers and opportunities. Many strikingly original intellectual ideas and social conceptions have aided the advance of civilization and culture. Where do we go from here? The World Academy is launching an inquiry into the power of new ideas to change the world. We omit from this project consideration of physical objects, and technological inventions such as the wheel, clock and computer, which have already been the subject of many studies.

We invite Fellows of the Academy to participate by submitting answers to the following questions:

- Which are the ideas that have had the greatest impact on human progress in the past? For each idea, please provide a brief explanation of why it qualifies.
- Which are the ideas that you think will have the most powerful transformative impact on the future of humanity? For each idea, please state the reasons why you propose it.

To submit answers or seek clarification, contact

seed-ideas@worldacademy.org.

Double Factor Ten: Responsibility and Growth in the 21st Century*

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Abstract

*Since the world conference in Rio in 1992, the world has been facing the challenge of consciously organizing sustainable development. The goal is no less than the organization of growth compatible with sustainability, together with the creation of a global social balance and the preservation of ecological systems. In this context, the demands of a **global ethic** and of **intercultural humanism** must be effectively implemented in terms of a global domestic policy. Furthermore, adequate regulations must be set in such a way so as to make systematic practices that run counter to sensible rules and to the fair interests of others economically unprofitable.*

*The chances of attaining this ambitious goal of balance are limited. The alternatives are a **collapse** or a **resource-dictatorship / brazilianization**, probably connected with terror and civil war. Both alternatives are so disastrous that the countries of the world, facing the global financial crisis, the threat of a climate catastrophe and an aggravating division between the rich and the poor, might still come together in order to implement a better designed global order: **eco-social instead of market-radical**.*

1. Global Problems

As a consequence of economic globalization, the global economic system is undergoing a process in which it is increasingly ridding itself of fetters and constraints within the context of the **mega-trend of “explosive acceleration”**, which is taking place under partly inadequate conditions set by the global framework. A painful consequence of these inadequate conditions is the current **global financial and economic crisis** which, because of the resulting massive debts incurred by countries, poses a substantial threat to sustainability.

But also, the international **transfer of labour** has brought about negative effects: gains for some to the detriment of others who suffer heavy losses. The consequence has been a partial deconstruction of the welfare systems in the rich countries, a **decline of the situation of the middle-income stratum** and important losses of states' tax revenues. On the whole,

*A short version of this article titled “Tenfold increase in global wealth plus tenfold increase in environmental efficiency” was published in April 2010 in a special issue on “Sustainability” in German in *PWC* journal. This article was translated by Daniel Saudek, independent scholar in Science and Theology.

this is a development which threatens (long-term) stability through an increasingly short-term orientation, also to the detriment of the future.

The cause of the global regulation deficit is the **loss of the primacy of politics** in the context of globalization, because core political structures – in contrast with economic processes – have retained a national or to some extent, continental orientation, but not yet attained a global one. Because of insufficient international agreements on regulations and the resulting wrong orientation of the global market, the developments described **run counter to the goal of sustainable development in a massive way**. Where do the really important challenges lie here?

2. The Derestriction of the Financial Sector as an Instructive Example

Currently, the most important problem on a global scale is the derestriction of the financial sector as a consequence of globalization in the form of **digital capitalism**. Capital is roaming around the globe in an uncontrolled manner, always in pursuit of ever higher investment returns, and is putting governments under pressure, while arising from almost nothing. The **avoidance of tax payments** is becoming the most important segment for value creation for certain key-players. This is done by taking advantage of complex international legal situations and the special possibility of **off-shore financial centres** on the one hand, and by **creation of new monetary value** or borrowing through premium-debtors on the other.

The modifications of regulations for financial markets in the last few years have enabled small groups of premium-agents to generate capital **virtually from nothing** through new forms of **monetary value creation** using novel types of financing instruments. An example worth mentioning is the “innovation” of the securitization, on a vast scale, of loans, made (politically) appealing with the argument of (a better) distribution of risks. However, these securitizations also make a massive extension of the granting of loans possible while capital contributions remain equal, which has led to a massive increase in risks. The disposition of loans has led to a significant lowering of (the necessary) care in the granting of loans, because the risks are now borne by others (e.g. in the US subprime market). Loans were bundled together in great numbers, taken apart, bundled up again, (only to be once again) taken apart and rebundled, and in such a way were rearranged to less and less understandable constructs. Imagine sausages in a funfair being made into new sausages: their quality standard in comparison to the original piece of meat is probably still more transparent than the reciprocal effect between the third securitization and the original risk in the financial sector. Even being able to sell such a thing necessitates an **excellent rating**, which has been ultimately made possible through Credit Default Swaps which in turn have turned out to be **bluff packages** (the charges taken in annually were higher than the financial security deposited for an emergency). Problems in the US subprime market (less than 1% of the collateralized volume) (then) brought the complex house of cards to a collapse. Large fees were cashed in and rebates distributed for the fabrication of illusions (**voodoo economy**). And the governments of the United States and the United Kingdom have refused to even address this issue in as late a conference as the G8-summit in 2007 at Heiligendamm (Germany). For these countries had benefited too much. Here lies the ultimate cause of the mentioned problems.

Despite the current crisis, the international community has once again managed to save the system, and this has been at the cost of **exorbitantly increased debts of states**. The situa-

tion includes the socialization of the losses after having privatized the gains beforehand. How are debts ever to be written off in this way?

3. The Question of the Environment and Resources

However, the financial and economic crisis is not the only area which causes problems. For against the backdrop of an extremely rapid growth of the global population, the **global state of the environment and resources** is exacerbating significantly within very short periods of time. Humanity is moving towards the mark of **ten billion** people. In addition, hundreds of millions of people are becoming accommodated to lifestyles marked by high resource consumption. Can this work out well by any means, and is there any sort of prospect for the future?

Firstly, it holds true that, as a consequence of the growth processes described, **access to resources and the strain on the environment** thus brought about are increasing dramatically. There is no prosperity without the availability of resources! However, overuse leads to collapse. Who should be able to, and who should be allowed to access a given resource, and to what extent? War or peace can depend on the answer to this question. A bottleneck for the **feeding of the global population** may therefore ensue in the next few decades, despite a massive increase in food production. The prospects for the field of energy and climate look equally dismal. There is a threat of gravely problematic situations and conflicts. In a historical perspective – compare the example of **Easter Island** – there is a threat of a collapse of entire societies. And a large part of the elites all over the world are still used to thinking in terms of **competition of nations** rather than in terms of **international cooperation**. What is called for, instead, is a way of thinking committed to the global common good, i.e. to a universal principle of sustainability, marked by a supranational, intercultural and inter-generational orientation. **Global leadership** is what is called for here!

4. Technological Progress and the Boomerang effect

The question of the **limitation of the usage of non-renewable resources** and the **limitation of the strain on the environment on a global scale** while at the same time enabling a **high growth rate**, occupies before the background described, the centre stage among all attempts to arrive at sustainable solutions. Technological progress is of key relevance in this context. The goal is a factor 10, i.e. the reduction of the strain on the environment per unit of value creation produced to one-tenth of today's values (**dematerialisation, increase in eco-efficiency**). This is being discussed and implemented in many fields today – in real estate, e.g. with **green buildings**, passive houses and even positive-energy houses.

However, it must be cautioned that technology alone does not solve the problems – neither today nor in the past. Technological progress, unless accompanied by the setting of adequate rules leads to more, not less, overall strain on the environmental systems because of the so-called **boomerang effect** (an example is the supposedly “paper-free office” – the place with the highest

“We need innovation in technology and governance simultaneously, in order to attain a double factor of 10.”

paper consumption in the history of mankind.) However, each demand for limitations, e.g. of CO₂ – emissions, immediately poses the global and to this day unanswered **problem of distribution of emission rights** in its full urgency. This is an issue of **global governance**. And this is why we need innovation in technology and governance simultaneously, in order to attain a **double factor of 10**.

“The question is, however, whether a high level of prosperity for ten billion people is even thinkable.”

5. Double Factor of 10

The challenge which the world is facing today may be sketched out as follows: starting from the current global financial and economic crisis, and while facing the threat of climate and resource collapse, the task is to create a **future worth living for 10 billion people** over the next 70 years. If high global prosperity together with a high level of social adjustment and balance, also between countries, is achieved, then global population can be expected to drop rapidly from about 2050 onwards. The question is, however, whether a high level of prosperity for ten billion people is even thinkable. Can we escape the current crisis without all having to tighten our belts?

At the moment there are an increasing number of people who all but despair of the current situation and demonize growth as the root of all evil. There is also the idea of completely reorganizing public finance, to the point of abolishing interest and compound interest. Such approaches underestimate the amount of vitality which the world needs in order to create sufficient wealth for 10 billion people. A “programme of going back” is not acceptable for most, especially not in democratic processes. At the most, this might be acceptable following catastrophes or lost wars, but one ought not to play with the thought of these kinds of developments.

However wrong today’s ill-reflecting concept of growth may be, the demonizing of growth and the **underestimation of the potential of innovation** are equally perilous. We do not find ourselves within a zero-sum game in which it is necessary to distribute scarcities. At the most, this holds true for resources, but not for what we are able to obtain from them when proceeding in an intelligent manner. A reasonable future is conceivable only if we succeed in bringing about a **substantial and continuing global growth** with significantly different respective rates of growth for the rich world and for the developing world over a long period of time, while maintaining **consistent protection of the environment and resources** on a global scale. **Protection of the environment and resources** comes first; growth enters the picture only when this condition is met. Such growth must be part of a Global New Deal and because the environment needs to be protected, this must be a **Global Green New Deal**.

In this process, the creative power of market processes, creative destruction **in the Schumpeterian sense**, and the power of innovations need to be made use of. Simultaneous innovations in both technology and governance are called for in order to avoid the boomerang effect, in which context the governance must of course be of a supranational character.

How is this to be envisaged? How can one imagine a double factor of 10? And what needs to be done to that end? The starting point is the so-called **future formula 10 ~> 4:34** of the

author. This basically says that the world, if the correct procedures are employed, can become 10 times as rich in 70 years than it is today, in which context today's rich world can become four times, and today's developing countries 34 times as rich. The size of the population in the poor countries thereby doubles. The social balance on the globe will then be roughly equivalent to that found in Europe today. The scarcity of resources is handled through appropriate assignation of rights, price developments, new technologies and alternative life-styles. **Qualitative growth** is the actual challenge. The (typical) life-style of the future would then be much less demanding in resources than today's, especially since resources will be more expensive. High-quality creative services in turn will be much cheaper.

Many people have difficulty imagining a double factor of 10. A tenfold increase in global economic performance within 70 years without additional exploitation of the environment, no extra consumption of resources because of an increase in eco-efficiency by a factor of 10 – all these, for many, are beyond possible. But that is exactly what is being aimed for today in the field of **Green Buildings**. And the market as a high performance innovative system is up to this task, especially when returns on financial assets are not too high. Suffice it to recall that in the seventeenth century, there were only one-tenth of the number of people living today, that 90 percent of people worldwide and more than 50 percent in Europe were working in agriculture, and that Germany as well as Europe went through recurrent famines nevertheless. And now, we have ten times as many people in the world, only 3 percent still work in agriculture in the rich world, and globally, we are producing food for 13 billion people. Half of this, however, is being processed through livestock units (especially cattle), while 24,000 people starve every day – a regulation deficit due to the lack of a **global social system** (e.g. minimal daily allowances for those in need co-funded globally) which would provide everybody with a minimum supply of the purchasing power needed to avoid starvation.

6. The Power of Innovation is the Key to a Good Future

If we use the power of innovation and consistently implement the restrictions on the usage of resources, which presupposes global coordination and internalization of adequate prices into the global economy, then we have every chance of a global economic miracle and of prosperity all over the world. The goal of **Muhammad Yunus**, the Nobel Peace Prize laureate in 2006, is to overcome poverty on this globe, which can be attained. We can combine sustainability and wealth, but this calls for a greatly improved global governance and its implementation in terms of compliance and Corporate Social Responsibility in view of solving global problems. This is the noblest task of the economy and of global leadership: serving the people, solving social problems, and supplying the necessary goods and services. And all this in such a way as to consistently protect the environment, save resources for future generations, and make the dignity of every human being count.

7. Eco-social Instead of Market-radical

The programme described can be implemented. The way of getting there is not anything new; it is well known from the sphere of the nation-state. But the issue must be put on the agenda anew, and at the **global** level. The answer to today's crisis and lack of direction is the eco-social and at its core ordoliberal approach of regulated markets typical of Europe (**social**

market economy) and a few Asian national economies (**network economies**). For this economic ordering model at a **global** level, the following equation applies:

$$\text{Market Economy} + \text{Sustainable Development} = \text{Eco-social Market Economy}$$

This model would need to be established in the context of the global economy, and at the end of the day would translate, within the framework of a **Global Contract**, the requirements of a global ethic and of intercultural humanism into a form of **global domestic policy** of a **global democratic character**. The European Union constantly demonstrates the efficacy of this approach in its enlargement processes. The **Montreal Protocol** is also worth mentioning as a successful example of international cooperation, which was agreed upon following the same logic. A contemporary approach for advancing such a pathway globally is represented by a **Global Marshall Plan**, which links the building up of structures and the implementation of standards to the co-financing of development.

“*In every crisis
there lies an
opportunity.*”

8. Is There Any Hope?

In every crisis there lies an opportunity, although one usually also pays a high price during (such) a crisis. Today, this high price consists in the significantly deteriorated situation of states which are now facing very high debts. Working off such mountains of debt is **not** going to succeed through tightening the belts in the area of social welfare – the scale of such an undertaking would demolish democracy. Instead, the practical approach is to finally **tax** the global economic processes, and especially also the value creation processes in the financial sector adequately. This is necessary for reasons of regulative policy and is a question of both justice and prudence, but would also slightly increase the friction in certain trading processes, which are too fast by now, thus bringing about more stability, and furthermore, would improve transparency in addition to the ability to manage such processes in the widest terms. Tax harmonisation is of central importance, but so is **keeping tax havens in check**, not only through increased transparency, but also through minimum taxation levels.

Today, the considerably more difficult situation of nation-states promotes considerations in the direction described. The transition from **G8 to G20** is significant. Especially questions about the global social situation, resources and climate pose themselves differently at the G20-level than at the G8-level. Two-thirds of the global population and 90 percent of global economic performance are represented by the G20. This is a considerable approximation to a more democratic global governance structure.

There is hope that the G20 will consistently address the issues of tax havens and better governance of the financial sector. And perhaps there is hope too in the field of climate change. At least at the concrete level of facts the problems concerning the future can (in principle) be brought under control. We are in a good starting position as regards capacity, knowledge, methodology and the necessary financial, human and technical resources. We only need to realize that the **current situation calls for a broad cooperation of states**. There is a way we can walk together now in order to attain a reasonable future: a double factor of 10 made possible through an adequate global governance system – **eco-social instead of market-radical**.

More information at: www.faw-neu-ulm.de, www.oesf.de, www.oesfo.at, www.senat-der-wirtschaft.de or www.globalmarshallplan.org.

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Private R&D Driving Growth of Global Green Economy

As of July 2012, \$3.6 trillion has been privately invested in a greener, global economy, since 2007. As the world continues to invest at least \$1 trillion per year until 2020, we are leaving the fossil fueled industrial era and entering a new solar age based on principles of equity, sustainability, and design based on nature.

The [August 2012 Supplement](#) to the February 2012 Global Green R&D Report by Ethical Markets focuses on investments companies are making in green research and development (R&D). The Green Transition Scoreboard® (GTS) tracks investments in Renewable Energy, Green Construction, Smart Grid, Energy Efficiency, Cleantech and R&D. Of these, R&D accounts for 6.7% of the total GTS at the end of Q2 2012, more than Smart Grid, Energy Efficiency or Cleantech.

The GTS research is the most comprehensive assessment of corporate, green R&D performed to date, derived from sustainability reports, company financial statements and media reports. This Supplement identifies companies responsible for more than \$241 billion in green R&D. The GTS data identifies and supports innovative companies ahead of the curve in responding to heightening environmental risks and regulations. Significant investments in green R&D validate that a company has integrated sustainability into its core strategy.

The Supplement includes country and sector analysis. Breakdown by country shows Germany, Japan and the USA leading the way among the top 24, with China, Brazil and India, three of the BRIC, making a strong showing. R&D is the strongest in the automotive, semiconductor, and electrical components and equipment sectors. Electronics and computer sectors are 4th and 5th, above environmental controls and building materials, pointing toward consumer-driven demand for greener everyday products.

Companies large and small around the world are recognizing a competitive advantage, and are making big bets on green innovation. They see significant growth potential in green markets, and are positioning themselves to profit from a larger market share. The transition to a green economy is happening, and it is the world's most innovative companies that are driving it forward.

Rio+20

*They Delivered What They Could Deliver
And It Was More (And Different)
Than You Might Have Thought*

Robert E. Horn

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Visiting Scholar, Stanford University

Abstract

This reflection on Rio+20 examines many of the major social institutions and how they fulfilled their functions during the United Nations Conference on Sustainable Development at Rio. The institutions are: 1. Nation-states as a collective. 2. Individual nation-states. 3. Vanguard institutions (some NGOs). 4. Action and convening NGOs. 5. Global media. 6. Governments of nation-states acting domestically 7. Individual governments in bilateral and multilateral situations. 8. Similar institutions in different countries acting together. 9. Businesses. 10. Global science. Each is considered within the assumptions of what the society expects them to deliver (in general), what is possible for them to deliver, and what they did deliver at Rio. In approaching Rio+20, our account differs considerably from much of the reportage by the mainstream media.

If you read the mainstream media reportage you would have concluded that Rio+20 was a “failure”. The government delegations did not produce a strong declaration, full of commitments, of reducing poverty, stopping climate change, and developing economies sustainably. But my personal sense was different from what I read. I was there for 7 days of the conferences and meetings. I also read about 50 media accounts of the event. That reportage, to a large degree, wasn’t what I experienced.

It seemed to me that this “reportage” was built mostly around the expectations of the leaders of organizations that I call below the “confrontational NGOs.” In short, these NGOs had “expectations” or more appropriately, “wishes” that were out of line with what one could realistically expect (given what social science knows about political behavior). One could predict with considerable certainty that they would be extremely disappointed. Thus, one of the filters through which many of the media framed their stories was through these expectations and the resultant “failure” to meet them.

But that wasn’t the whole story of Rio+20. Not by a long shot. Rather than engage in a tit-for-tat critique of the mainstream reportage, I will describe what I saw and what perhaps we can begin to make of it.

One of the ways to look at an international conference like Rio+20 is through the lens of the major institutions of global civilization such as governments, businesses, NGOs,

the media, etc. Together, they form the human ecosystem of institutions that humans have created. Together, they delivered what they could deliver. We can step back and ask: “What did they deliver with respect to sustainability (both for the planet’s ecosystems and the continued thriving of humanity)?”

1. What was Rio+20?

Official name: The UN Conference on Sustainable Development, held in Rio de Janeiro, Brazil on 20–22 June, 2012. Themes: “The Future We Want” and “The Green Economy”. The “+20” marks the 20th anniversary of the Earth Summit held in Rio in 1992 during which the international treaties ‘The Convention on Biological Diversity’ and ‘The Framework Convention on Climate Change’ were signed and ‘Agenda 21’ was formulated.

2. What Happened?

50,000 people came to Rio de Janeiro to dialogue. Almost 4,000 of them were journalists. 100 were heads of states. The government officials met for 3 days and produced a document called the Rio Declaration. Almost 10,000 non-governmental organizations were registered. They convened around 6,000 side-events lasting an average of one and a half hours each. At least, 2,000 business leaders were there for five full days of major business side-events. A “People’s Summit” from civil society met in a park which was a considerable distance from the convention halls. Scientists had several-day meetings ahead of the official government meetings.

3. The Mood

Upbeat. Everybody worried, but hopeful about the future. All with a proliferation of ideas to put human civilization on a more positive course. In 30 or more pavilions and tents in several large clusters, some more permanent than others. Scattered around the city. Government negotiators were in one pavilion. The major stakeholder groups in two others. The press had a third. All these were clustered around a food court pavilion. Across the street from the convention center was yet another field full of large tents and pavilions given over to the nations of the world – a kind of mini world’s fair.

4. The Outcomes: Governments Working Together

In the media around the world, the spotlight was on the 180 nation-states and what they could put together in an international consensus process. And what the nations acting together could deliver is a 49-page Declaration mostly filled with suggestions – to each other and to other institutions – but few commitments.

Some people fantasize that nation-state leaders can decide anything they want to at any time, and do anything. Not so. I will list some of my assumptions about the behavior of institutions.

Assumption One: Nation-states can only agree to do on the international stage what their domestic politics and their national power (soft and hard) permit.

Assumption Two: Sometimes, under unusual sets of circumstances, they can act together and create new global institutions (in this case read: treaties of which the two signed in 1992 are examples). Rio+20 was not such a situation.

These two assumptions that come out of observations of governments trying to make treaties and other agreements provide us with quite different expectations. The governments working together on the Rio Declaration delivered what one could expect from these expectations. It should be noted that 180 countries working together this year at Rio+20 were able to agree on three modest actions to strengthen international institutions.

Firstly, the UN Environmental Programme was made a “universal membership” body (all nations are now members). This gives it a stronger foundation and mandate within the UN special agencies.

Secondly, the UN Commission on Sustainable Development was upgraded and proposed to have a status equal to the UN Economic and Social Council (ECOSOC), and thus can report directly to the UN General Assembly. These are to be formally approved at the UN General Assembly meeting beginning in September 2012.

A third outcome of the Declaration was a consensus on setting a process for creating Sustainable Development Goals (SDGs) for 2030. These are an upgrade to the Millennium Development Goals that expire in 2015. The governments agreed on a two-year timeframe to develop the SDGs (2014) and to identify the means of implementation.

Noting a shift in the framing of the international dialog, Conservation International said: *“Of greatest importance was the fact that for the first time we saw both governments and businesses explicitly recognizing that natural capital (bio-diversity and ecosystem services) is the essential core element of sustainable development and that healthy ecosystems must be the foundation of human well-being. This is an extraordinary and transformative change in mindset, as it finally moves the environment from a marginal issue to a central component of future development strategies.”*

5. The Outcomes: Confrontational NGOs

Assumption Three: Human societies need vanguard institutions (some with international scope and scale), usually called NGOs, whose job is to monitor the boundaries and frontiers of global civilization’s future and to assess, forecast, warn, cajole, plead, shout, protest in anger or otherwise attempt to move societies in different directions.

So, one would expect that the failure of the actions of the 180 countries acting together would greatly frustrate the leaders of these NGOs. Their job is to deliver criticism – particularly in the case of businesses and governments – on the speed and effectiveness of the other institutions moving to a sustainable future.

It was the NGOs’ expectations (read: disappointments) which were featured in many of the media accounts of the conference. So, we heard statements from Friends of the Earth International saying, “Once again, corporate polluters have held UN decision-making hostage to furthering their economic interests, at the expense of people’s well-being and the planet.” Kumi Naidoo, the global head of Greenpeace, said the organization was so “disappointed”

by what Rio+20 could deliver that they decided to move to a “war footing” with the financial sector of global business. I thought to myself, “Just doing their job in the ecosystem of institutions we all live among.”

6. The Outcomes: Media

Assumption Four: Taken together, the global media organization is also an institution. Its job is to report what is happening, often by being stenographers for the rhetoric of the leaders of other sectors. Because they have to depend on attracting readers, the media tend to focus their stories on conflict and the most outrageous behavior of people in the other institutions.

The journalists, print, TV, and film, who were at Rio+20 (mostly) provided headlines such as these:

“A colossal failure of leadership and vision” (quoting World Wildlife Fund).
“Environmental summits lose value as past pledges go unmet” (Toronto Globe and Mail).
“Diplomats agree on ‘weak’ text for Rio +20 green summit” (Reuters).
“Rio+20 declaration talks fail almost before they begin” (New Scientist).
“Rio+20: Progress on Earth issues ‘too slow’ – UN chief” (BBC).

Thus, the media, for the most part, delivered the news in fragments focusing as much as possible on the sharp edge of the debates and the most audible critics.

7. The Outcomes: Initiator NGOs

Assumption Five: Many NGOs can use their institutional flexibility and influence to convene, organize, and institutionalize large initiatives that governments and businesses find difficult to get off the ground.

Some NGOs gathering together with governments and businesses made major announcements and commitments along these lines. They showed what they could deliver. One of these is a major reforestation initiative.

USAID’s Deputy Administrator, Ambassador Donald Steinberg, announced that the U.S. Government and companies of the Consumer Goods Forum are forming a new partnership to work together to reduce deforestation by “greening the supply chain” and, within 100 days, would hold a global partnership dialogue. With all due respect to my colleagues who have been in the room negotiating, I don’t think these are side events. This is the main event. For me, this was the most succinct summary of Rio+20.

“The Consumer Goods Forum, representing more than 400 companies and brands operating with combined annual revenues of over US\$3.1 trillion, has pledged to achieve zero net deforestation in its supply chains by 2020.”

The Consumer Goods Forum, representing more than 400 companies and brands operating with combined annual revenues of over US\$3.1 trillion, has pledged to achieve zero net deforestation in its supply chains by 2020.

Summing up the conference, Sha Zukang, a Chinese diplomat and Secretary-General of the summit, reported that 692 side commitments by governments, businesses, and NGOs were made at Rio valued at \$513 billion.

8. The Outcomes: Individual Governments

Assumption Six: Governments of nation-states are major institutions and have somewhat more flexibility in what they can accomplish acting separately than they can have acting together with other governments.

Individual governments are also major institutions in the world. A number of individual governments made announcements of significance. Notable among these, for example, was British deputy prime minister Nick Clegg's announcement that the British government will require all companies listed on the London Stock Exchange to report their greenhouse gas emissions publicly.

The Brazilian state of Pará that covers a large part of the Amazon committed publicly to get to zero net deforestation by 2020.

South Africa, Denmark, France, and Brazil said they would implement UNEP's global reporting of environmental country footprints for their companies.

Countries like Kiribati and Cook Islands in the Pacific and the Maldives, which had been leaders in the group of "Small Island States" announced that they were creating the world's largest marine reserves incorporating the ocean around their more than 2000 km islands. They also noted that they were becoming the first "Large Ocean States".

Assumption Seven: Individual governments can also make bilateral and multilateral agreements and join with other NGOs and businesses to start new initiatives (that are easier to accomplish than coming to consensus with the other 180 nations).

That happened at Rio+20 – in a big way. Here are some examples of that.

The US government announced a \$2 billion commitment to a clean energy development program of aid for Africa. And the US Agency for International Development announced a conference within 100 days to implement the Consumer Goods Forum's pledge to have zero net deforestation by 2020. A large number of big international companies are part of this including Coca-Cola, General Mills, Kraft, and Colgate.

I noted in Axiom One that national governments are limited by what their domestic politics will permit (i.e., you cannot do anything if you are not reelected). The corollary to that axiom is that nation-states do have more flexibility to act within their own borders, again, domestic politics permitting. A few months prior to Rio+20, a group of parliamentarians calling themselves Global Legislators Organization (GLOBE) released a report that showed significant movement at the domestic level among many governments. Their report said:

"Legislation is being advanced, to varying degrees, in all of the countries studied [16].

Most of the legislative activity has taken place over the last year and a half – contrasting sharply with the difficulties experienced by the international negotiations

over the same timeframe. This demonstrates that the shape of the debate is changing from one about sharing a global burden – with governments naturally trying to minimize their share – to one of a realisation that acting on climate change is in the national interest. It is particularly encouraging that the large developing countries of Brazil, China, India, Mexico and South Africa – who together represent the engine of global economic growth – are developing comprehensive laws to tackle climate change.”

GLOBE President, Rt Hon. John Gummer, Lord Deben wrote, *“The study illustrates that the shape of the debate on climate change is shifting from being about sharing a global burden – with governments naturally trying to minimise their share – to a realisation that acting on climate change is in the national interest.”*

What this says to me is that a growing awareness has been arising over the last 20 years since the 1992 Rio Earth Summit and is being translated into possibilities for action within nations. And as the awareness of sustainability and climate-change challenges increases what individual nations can deliver, the way of change is itself changing.

9. The Outcomes: Coalitions of the Willing

Assumption Eight: Institutions in different countries find themselves having similar interests, goals, and capabilities that can translate into coordinated action.

Eight of the world’s big development banks are shifting their transportation investments (\$175 billion – not new money) from road and highway construction to urban transport, including buses, trains, and bicycle lanes.

A “Natural Capital Declaration” put together by the Global Canopy Programme and the UN Environment Programme engaged 57 countries, banks, companies and investors to pledge to measure wealth in terms of natural capital. This puts a “green accounting system” into national and company accounts. The World Bank and 86 private companies signed on to ecosystem services (the value that air, water, forests, and ecosystems provide to the human economy). Signatories included China Merchants Bank, Puma, Dow Chemical, Unilever, and Mars.

Ban Ki-moon’s ‘Sustainable Energy for All (SE4ALL)’ initiative kicked off at Rio as well, with more than 50 governments planning together to achieve the three goals of the initiative: to ensure energy access for approximately two billion people who have no electricity, double the share of renewable energy and double energy efficiency. Key stakeholders, including governments, businesses, banks, civil society pledged \$50 billion to achieve these goals by 2030.

Another group was there: the justices and prosecuting attorneys of many countries who were concerned about sustainable development, poverty, and human rights. I did not attend these sessions. But among the topics introduced was the possible criminalization of peace-time “ecocide” in the same treaty that already exists for wartime massive destruction of ecosystems. As far as I can tell, there was no agreement, and, indeed, no recommendation on making ecocide an international crime against humanity — not this year.

10. The Outcomes: Business

Assumption Nine: In the global economy, businesses have great scope and scale in delivering goods and services and, in many cases, greater flexibility and capability to deliver rapid change to the sustainability and climate change situation than governments or NGOs.

Businesses deliver around 60 - 70% of global GDP. They too were showing an increasing awareness of how the future would have to change. And they had the willingness to take action on climate change and sustainability. Here are three (of the hundreds) such announcements made at Rio.

Microsoft committed to going carbon neutral in its operations in over 100 countries.

Infosys, the big Indian computer and outsourcing services company, committed to reducing energy consumption by 50% and sourcing 100% of its electricity from renewables by 2018.

Bank of America has announced a ten year \$50 billion fund for environmental investment.

The insurance companies of the world are beginning to realize their common interests and goals. At Rio+20, they got together as a group and released a set of principles of sustainable insurance. It is clear that insurance companies and reinsurance companies are carefully looking at the issues of climate change and sustainability with an intense focus on pricing risk. They will be reassessing annual insurance premiums for property damage and liability. And they have influence in the global economy. They control, some say, up to 7% of global assets.

It may be that we will look back on this public shift in business strategies as the major outcome of the Rio+20 conference.

11. The Outcomes: Science

“Science delivers, with notable exceptions, dense, specialized, sometimes pretty obscure findings that are barely comprehensible to people in other social institutions.”

Assumption Ten: Science in our civilization has the responsibility for observing, conceptualizing and reporting major processes and trends on the physical, social, economic, and cultural aspects of the planet. It delivers, with notable exceptions, dense, specialized, sometimes pretty obscure findings about the immense complexity of the planet that are barely comprehensible to people in other social institutions.

It was science that got this whole enterprise going in the first place. Rio+20 was initiated and energized as a result of what science has been discovering and saying for the past 40

years. And the scientists, meeting a few days before the meeting, did not disappoint. For the most part, they gave us complex, lengthy appraisals of the physical situation, clouded with caution about uncertainties and unknowns and notice of the “need for further research.”

Well, these are our human institutions. They were all present at Rio+20. They were all there delivering what they could deliver – not more, not less.

So, Rio+20 gave us an opportunity to see what human institutions, as now constituted, could deliver in the face of perhaps the greatest challenge ever to face humanity and an accelerating, potential global disaster. As the Declaration said, *“We reaffirm that climate change is one of the greatest challenges of our time, and we express profound alarm that emissions of greenhouse gases continue to rise globally. We are deeply concerned that all countries, particularly developing countries, are vulnerable to the adverse impacts of climate change, and are already experiencing increased impacts including persistent drought and extreme weather events, sea level rise, coastal erosion and ocean acidification, further threatening food security and efforts to eradicate poverty and achieve sustainable development”* (para. 190).

Greater awareness was present at Rio+20. What is hard to assess coherently is the overall level of global awareness that might lead to continued effective action.

12. Another Lens – Perhaps a Global “Movement” Slowly Coalescing

Speaker after speaker assured their audiences — as if in a ritual — that sustainability was the most important thing for those gathered to agree upon.

And the whole audience nodded. The message was repeated in panel after panel.

And almost all speakers exhorted the assembled that the most important thing to do was to “collaborate.” And, it appeared to me, the audience nodded. At one point, I thought that “collaborate” was the most-used word at the conference, almost beyond the endless repetition of the word “sustainable.”

What was happening here? What is to be made of such rituals?

Assumption Eleven: We are a groupish species. We need to know that our closest community agrees with us and us with them.

And any major change in our group direction needs to have lots of this kind of agreement. We need to hear our group leaders say what they (and we) are thinking about our purposes and goals. And, after that we can get busy on the actions we are able to take responsibility for.

I am struggling here to find the right words to describe what seemed to be happening among the 50,000 people assembled. There was a growing sense of identity, of “we” are all in this together. But what do we “call” ourselves? Are we a “movement?” Do we have

“There was a growing sense of identity of “we” are all in this together. But what do we “call” ourselves? Are we a “movement?” Do we have the potential power of a global movement?”

the potential power of a global movement? Huge numbers of the 50,000 people assembled represented whole organizations that were part of this “we.” Some of the business executives there lead organizations with a hundred thousand workers and more. There was a wider sense of “shared identity” happening.

But, one of the things largely missing from the gathering is something that Rio, the city, is known for – the elements of the carnival. What was hard to find at Rio+20 were massive art works – like the floats and huge beautifully costumed dancing, singing groups. What was missing was that kind of ritual that bonds people together in another way than rhetoric from panel discussions and speeches. What was missing was a signature song, like “We shall overcome” that served the American Civil Rights Movement so well. We were like fans at a football game without a crowd cheer.

All this is the kind of thing that is hard to assess – even at a meeting like Rio+20. How big is the movement? How fast is it growing? How much agreement is actually there? What is its shape — in scope and scale? How powerful is it? How powerful could it become? How do we forecast the progress it will make? Will the movement achieve its goals within the timeframe that scientists have sketched out for planetary civilization? Those are questions I did not hear discussed at Rio+20.

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The Future of the Arctic: A Key to Global Sustainability

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Abstract

The USACOR Report forecasts that by 2050 the Arctic will become the major supplier of energy to the world, in particular oil and natural gas, and natural resources such as mineral water. In the coming decades, the population in the Arctic region is projected to increase significantly due to the expansion of exploration for resources. The Report recommends that a Zero emission policy be implemented throughout the Arctic area for water emissions into the seas, rivers, or estuaries and oceans. The Report recommends that the Arctic Council guarantees safe navigation and environmental protection, establishing a Fund to cover expenses to purchase icebreakers and towards the cost of the personnel in order to assist commercial navigation in the Arctic region. The Arctic Council shall also issue environmental rules to regulate the mineral exploitation in the region and ensure that the wildlife is protected and that the exploitation of resources is conducted in a sustainable manner.

1. Legal and Political Issues

1.1 Political status of the Arctic

Throughout its entire history, the Arctic has been a relatively peaceful region. Prior to World War II and the Cold War, the Arctic's political and economic development was primarily influenced by indigenous peoples as well as European explorers and colonizers.

The Arctic Council (founded in 1996) has sought to increase cooperative efforts among its member states — Canada, Denmark (representing both Greenland and the Faroe Islands), Iceland, Norway, the Russian Federation, Sweden, and the United States.[†] The Nordic

* This article is an excerpt taken from the 2012 report of the US Association of the Club of Rome. The full report is available on the website www.usacor.org.

† See <http://www.arctic-council.org/index.php/en/about-us/members>

Council has also addressed and worked on similar issues as the Arctic Council.*

Both the Arctic Council and the Nordic Council have worked to improve cooperation among their members in the areas of environmental protection and sustainable development. In 2011, the Arctic Council member states signed the Arctic Search and Rescue Agreement, the first binding treaty concluded under the Council's auspices. This year, the Arctic Council member states are negotiating a second binding agreement on oil spills in the Arctic.

While other organizations exist to provide regional cooperation and stability, the Arctic Council has the greatest potential to act as a forum for future economic development and trade, security cooperation, and diplomatic resolution of territorial sovereignty issues.

Furthermore, non-Arctic countries have expressed interest in participating in the activities of the Arctic Council, in particular, China that presented a formal petition to become an Observer in the Arctic Council.

1.2 Disputes in the Arctic

Boundary disputes between sovereign nations of the Arctic which are currently pending include these disputes:

1. Between Canada and the United States over a pie-shaped area extending from the eastern side of Prudhoe Bay into the Canadian Basin;
2. Between Canada and Greenland/Denmark over the boundary from the northern end of Baffin Bay northward from the Canadian Ellesmere Island and the north shore of Greenland towards the southern edge of the Lomonosov seabed ridge; as well as over Hans Island in the Nares Straits, a sea passage between Canada's Ellesmere Island and Greenland.
3. Between Denmark/Greenland and Norway over the boundary between the Greenland and Iceland seabed, east of Greenland/Denmark through the Greenland Sea and west of the Norwegian Svalbard archipelago.

A number of boundary disputes have been resolved. The dispute between Denmark and Norway over the continental shelf boundary between the Faroe Islands, Denmark, and mainland Norway was settled in a bilateral agreement in 1979. The controversy over the seabed boundary between Iceland and Jan Mayen, Norway, was settled through an international conciliation panel in 1981. The dispute between Iceland and Norway over the continental shelf between Jan Mayen, Norway, and Greenland/Denmark was resolved by the International Court of Justice in 1993. On September 17, 2010, Norway and the Russian Federation resolved the decades-old conflict over the disputed area in the Barents Sea, between Svalbard archipelago and the Novaya Zemlya archipelago. The agreement divided the disputed territory equally with plans to jointly develop boundary resources, which include an estimated 38 to 40 billion barrels of oil.

The Lomonosov Ridge controversy illustrates how a number of jurisdictional factors can interplay in a single dispute. In 2001, the Russian Federation submitted its claim to the extended continental shelf, including the Lomonosov Ridge, an under-sea protuberance that runs

* See <http://www.norden.org/en/about-nordic-co-operation/countries-and-territories>

from the northern edge of the New Siberian Islands across the North Pole to the north-eastern edge of the Canadian Ellesmere Island and the north-western border of Greenland/Denmark, just north of the Amundsen Basin. The Commission on the Limits of the Continental Shelf has not decided the issue, but has referred the Russian Federation back to collecting scientific data that will be used to support or to deny their claim. The Russian Federation is in the process of submitting an amended claim by 2013.

The Northwest Passage Dispute is, in some sense, a boundary dispute, but more profoundly is a dispute over sovereign rights versus international rights in the various classes of maritime regions described by U.N. Convention on the Law of the Sea (UNCLOS), and indeed, a referendum on the legitimacy of UNCLOS itself. Specifically, the Northwest Passage dispute concerns the extent to which the waters of the northern Canadian Archipelago are international and the extent to which Canada is entitled to exercise its sovereignty over the waters of the Northwest Passage. Interestingly, in this dispute, the antagonists are the United States and Canada, two close allies. Historically, the United States as a marine power has plied the waters of the Northwest Passage as international waters. With the advent of UNCLOS and the extension of sovereign boundaries into what were once high seas, Canada has claimed sovereignty over the water between the islands of its northern archipelago. Nevertheless, under the terms of Parts II, III, IV and V of UNCLOS, the vessels of all nations have rights of innocent passage, not only through Straits, sovereign Exclusive Economic Zones and Contiguous Areas of coastal nations, but also through the twelve-nautical-mile Territorial Seas. However, if the northern boundary of Canada is taken to be the farthest extent of its most remote archipelago islands, then the enclosed waters become Internal Waters and so subject to the absolute sovereignty of Canada.

1.3 The Future of Greenland

A substantial development in the field of mineral exploitation can be found in Greenland. Over one thousand years after the Viking explorer Erik the Red gave it its current pleasant name to attract settlers, Greenland is becoming an important strategic land for both North America and Europe.

In 2000, the U.S. Geological Survey (USGS) estimated that there may be as much as 47 billion barrels of oil offshore Greenland, starting a new wave of oil exploration in the world's largest island. In 2008, the USGS reported that the Arctic could contain about 22% of the world's undiscovered oil and natural gas resources.

Oil and natural gas are not the only strategic commodities found in Greenland. According to Greenland Mining Services, a private mining company based in Nuuk, rocks from Greenlandic mines sent to laboratories for analysis have in most cases been shown to contain traces of uranium. Tests have revealed that radioactive substance is present all over the country.

Another important resource present in Greenland is drinkable water. A recent USGS report states that the largest source of freshwater on Earth, 7 million mi^3 , is stored in glaciers and icecaps, mainly located in the Polar Regions and in Greenland, in contrast with two million mi^3 stored in aquifers below ground, and just 60,000 mi^3 stored in lakes, inland seas and rivers. The Ilulissat Glacier in Western Greenland is one of the fastest and most active glaciers in the world and produces 10% of all Greenland's ice fields, corresponding to around 35 billion tons of ice a year.

Greenland is renegotiating its relationship with Denmark, which has ruled the island since 1775. A non-binding referendum on Greenland's autonomy was held on November 25th 2008 and was passed with 75% approval. There are two main obstacles to the island's independence: Greenland's need for Danish economic subsidies and the percentage of Danish royalties on Greenland's resources. Greenland has full control over the issuance of mining licenses but Denmark currently receives half of the revenue from oil and mineral resources, a percentage that Greenland is trying to reduce.

Denmark remains responsible for Greenland's foreign affairs and defense. But Greenland's claim over Hans Island against Canada is an issue of foreign policy dealt directly by Greenland rather than Denmark.¹

There is a high likelihood that Greenland will become a new independent country within 5 or 10 years.

The island's independence and its potential ability to supply North America with essential resources such as oil, water and uranium are good arguments in favor of its access to the North American Free Trade Agreement. Free trade with NAFTA countries would produce dramatic benefits to the Greenlandic population in terms of access to low cost medicine and technology manufactured in the USA and Canada, as well as inexpensive textile products from Mexico. Greenland has been so far reluctant to enter free trade agreements to protect its fishing industry. For this reason, it withdrew from the European Economic Community in 1985. But the new mineral discoveries have the ability to transform the ice-capped island into Saudi Arabia of the Arctic, an economic phenomenon that would inevitably increase its population and economic dimension. In this case, the current protectionism would be replaced with free and fair-trade policies that are more appropriate to foster Greenland's economic development. If this happens, Greenland can either join NAFTA and enter a bilateral free trade agreement with the European Union (as Mexico did), or establish bilateral free trade agreements with both the NAFTA countries and the European Union.

Another important issue is security. As an independent country, it would be in Greenland's interest to join NATO and the Arctic Council. Denmark's position in the Arctic Council would not automatically transfer to Greenland. Therefore, Greenland would have to join both organizations as a new member.

Because of Greenland's geostrategic importance, the United States would have all the interest in inviting Greenland to be a member of NATO for negotiating the installment of a missile-defense system on the island.

1.4 The application of the U.N. Convention on the Law of the Sea to mineral exploitation in the Arctic

A common definition of the Arctic policy is fundamental to establish the rights to mineral exploitation in the region.

In 1970, United Nations General Assembly Resolution 2749, the *Declaration of Principles Governing the Seabed and Ocean Floor*, was adopted by 108 states, including the United States, declaring the deep seabed as the "Common Heritage of Mankind". In 1982, the UNCLOS codified the customary law concept of Common Heritage of Mankind, applying

it to “the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction” under Article 136. The International Seabed Authority was created by UNCLOS to administer access and exploitation of this common heritage. While the concept of the deep seabed as a common heritage is an established custom, the establishment of an agency to administer that heritage is not. The ISA, which is mostly focused on mineral exploitation, is the agency charged with regulating seabed resources in the deep sea, including oil and gas. However, because oil and gas reserves generally are found on the continental shelf, and the Exclusive Economic Zone (EEZ) is generally defined as up to and including 350 miles of actual continental shelf, the International Seabed Authority’s regulatory infrastructure is almost completely geared towards the exploitation of minerals.*

All Arctic littoral states define their jurisdictional rights to the Arctic Ocean area using the general framework of UNCLOS, according to the Ilulissat Declaration on 28th May 2008. Currently, U.S. companies cannot submit applications to the International Seabed Authority for drilling and exploration in the deep sea until the U.S. ratifies the convention, and the new binding tribunal elements of UNCLOS won’t apply to the U.S. without its accession to UNCLOS.

The five surrounding Arctic states — Russia, the United States, Canada, Norway and Denmark (via Greenland) — currently have an Exclusive Economic Zone (EEZ) of 200 nautical miles (370 kms; 230 miles) adjacent to their coasts, which is provided for by both UNCLOS and modern custom. Those with broader continental shelves with more than 200 miles, who are signatories of UNCLOS, can apply to the Commission on the Limits of the Continental Shelf for an extension of the EEZ up to 350 nautical miles if they can make a good case for it, and Russia already has applied.

The U.S. Government has argued, time and again, that deep seabed mining is a freedom of the high seas under customary international law. This position is based on Article 2 of the High Seas Convention of 1958.

Under this view, the U.S. contends that its companies enjoy a right of access to seabed minerals and that this right can only be altered by its acceptance of a different legal regime through the processes of conventional or customary international law.

The 1980 Seabed Act of the United States affirms that “it is the legal opinion of the U.S. that exploration for and commercial recovery of hard mineral resources of the deep seabed are freedoms of the high seas pursuant to Article 2 of the 1958 High Seas Convention”.†

The UNCLOS Implementing Agreement reached in 1994 weakened the provisions to which the United States

“The Arctic can play a key role in global sustainability if the exploitation of resources such as oil, natural gas and water is conducted in a manner that will not damage its ecosystem.”

*When proper claims are approved by the Commission on the Limits of the Continental Shelf.

†USACOR author Lockey White’s opinion is that the ISA’s authorization or other substitute authorization by the international community is required for all nations to exploit the deep seabed, including countries that did not ratify the UNCLOS because, under emerging peremptory norms, unilateral exploitation would not be appropriate under international law.

most objected (guaranteeing it a seat on the Council and eliminating the provisions compelling the transfer of technology), but retained the framework in which mining in international waters would be conducted under the authority of the International Sea-Bed Authority.*

The Arctic can play a key role in global sustainability if the exploitation of resources such as oil, natural gas and water will be conducted in a manner that does not damage its ecosystem. The mineral resources in the Arctic can supply a large portion of the increasing world demand for energy and water. It is the duty of all Arctic nations to establish clear criteria for the exploitation of the resources in the region for the benefit of mankind.

2. Energy and Resources

2.1 What is the Arctic?

What do we mean when we speak of the Arctic? The precise limits and definition of the Arctic region may be defined differently for different purposes.² For example, lawmakers and policy analysts may use a political definition of the Arctic (i.e. the member states of the Arctic Council), whereas cartographers may define the Arctic in terms of latitude (i.e. the area north of 66°30'N latitude, the Arctic Circle). For the consideration of resource and environmental issues, however, it is useful to refer to an ecological definition of the Arctic, conventionally understood as that part of the extreme polar region of the Northern Hemisphere where the mean July temperature is less than 10° Celsius. Restated in more intuitive terms, it is the region “where the soil is permanently frozen and where trees cannot grow”.³ This definition of course only collaterally refers to the fact that inside this terrestrial tundra perimeter, the largest spatial portion of the Arctic region is oceanic. However, this latter definition conveys the real limitations that the extreme conditions of the Arctic impose on both environmental and human economic activity and is used herein.

2.2 Defining the Problem of Sustainability in the Arctic

The Arctic is a fragile, irreplaceable environmental area easily degraded. It is chiefly an oceanic area with fluctuating extremes of natural conditions (climate, light availability) which reflect processes that are both planetary and anthropogenic. Since the end of the last Ice Age in the Arctic, the inhospitable conditions have limited *Homo sapiens* to a very few human groups living in very small numbers over millennia by hunting and gathering, with settlements chiefly along and/or near coastlines. Presently, growing demands for resources and access to other ocean basins through geographical features contained in the Arctic region will bring about human expansion; rapidly changing climate in the Arctic leads us to predict that technology will accelerate the process of resource extraction over the next 50 years. There are specific problems to overcome. Interactions of natural forces with mankind's efforts must be considered.

2.3 The Biological Arctic Resources

The areas of inflow from other oceans contain massive plankton communities, acknowledged to be the basis of the Arctic food chain, with associated prolific fish populations. The largest areas of the open water on or near the continental shelf and shorelines are predomi-

*See National Intelligence Council <http://www.dni.gov/index.php/about/organization/national-intelligence-council-who-we-are>

nantly within the Law of the Sea limits of Russia, Greenland, Iceland, Norway, Canada, Finland, and the USA. Much of the central area of the ocean has been covered for millennia by ice.

There are four basic Arctic fisheries: three in the Atlantic (the Norwegian and Barents Sea, Iceland-east Greenland, and Newfoundland-Labrador), and one in the Pacific (the Bering Sea). As Erik J. Molenaar and Robert Corell put it:

“Warmer Arctic surface and water temperatures, reductions in sea ice coverage and thickness, reduced salinity, increasing acidification and other oceanographic and meteorological changes are all factors that are certain to affect arctic marine ecosystems, accurate predictions cannot be made.”

The anthropogenic effects will also bring large changes.⁴

2.4 The Arctic Mineral and Energy Resources

Gas and oil production in the Arctic is presently about 16% of the total global production. The Arctic Council has estimated that up to one-fifth of the world’s undiscovered petroleum resources can be found in the Arctic. Further, they state that the Arctic’s share of the world’s presently-known petroleum resources is 12%. It is well-known that Russia is the most important gas and oil producer in the Arctic, and the bulk of proven Arctic oil and gas reserves is located in Northern Russia. (Note that together the production from Arctic Russia and Alaska result in 97% of the total Arctic oil and gas. Russia is predicted to contain the bulk of the undiscovered petroleum reserves while significant regions of petroleum are predicted to be in Alaska, Canadian offshore and the Norwegian Sea. Predictions include future, new oil-producing states occurring within Greenland and Iceland territorial waters).*

2.5 Conclusions: Sustainability of Arctic Ecosystems and Economies

The extreme conditions and the fragile and sensitive ecology of the Arctic mean that sustainable management and development of the region in the next 50 years will require a thoughtful approach to planning and regulation that consider not only the needs of future human generations, but the stability of the ecosystems that make the human economies of the Arctic possible. The exploitation of Arctic fisheries, forests, plus petroleum and mineral resources and increased shipping and tourism must not be allowed to compromise the integrity and function of natural systems and landscapes, which may well prove to be irreplaceable and of critical importance to the health of the planet.

3. Religion, Population and Health

3.1 Religion in the Arctic

In the case of the Arctic’s indigenous religions, the geo-climatic conditions that the Arctic population endured through millennia had prevented the development of more elaborate religious structures that would entice power and membership enlargement. As a result, doctrinal sophistication, elaborated forms of worship, and the building of elaborated sanctuaries are considerably absent, except for the presence of various “sacred grounds,” some protected by

*Information summarized from the Arctic Council webpage - <http://www.arctic-council.org>

law today.⁵ The Arctic forms of religiosity were simply limited to one's survival in relationship with the harsh nature, and thus focused exclusively on survival and healing, as seen in various forms of *animism* and *shamanism*⁶ still in practice today.

Although during the 18th and 19th centuries, Christian missionaries largely converted the Arctic indigenous population to *Russian Orthodoxy* (e.g., Siberia, Alaska and parts of Finland), to *Protestantism* (e.g., northern Fennoscandia, Iceland, the Faroe Islands, Greenland, Alaska and parts of northern Canada), and even to *Roman Catholicism* [Alaska, Greenland (missions to the Norse), and parts of Canada], the indigenous religion survived Christianity in the form of myths, superstitions and legends that rule one's daily life, as well as one's harmony with the universe itself.⁷ This is because the adoption of the Christian faith was not necessarily a replacement of religion, but a synergic combination and a merger of faiths that preserved key elements from the animist and shamanist outlook on life. Arctic shamanism was practiced as a restorative instinct toward healing, and toward the (re)establishment of man's harmony with the universe through preventive and curative measures. As the ritual leader, the shaman was the only one credited with the power to interpret the mystery of illness, cure the sick, control nature and predict the future. After years of training, the shaman's ritual itself implied going into a trance to communicate with the souls of the deceased.⁸

3.2 Religious demographics of the Arctic peoples

Given the rising trend of internal identity awakening, the recreation of tradition and symbols, as well as in light of various efforts for cultural preservation made by the Arctic Council and other entities, it is highly unlikely that Arctic religious spiritualities would disappear.⁹ * Yet, emerging challenges will be triggered by global competition over resources,¹⁰ which, for the Arctic population and its spirituality, will be nothing more than a "resources curse." Given the resource-driven immigration into the Arctic, missionary activities will most likely parallel resource exploration in line with the common trend of the colonial era.¹¹ Such activities will most likely reinforce the existing religious organization, attempt to convert the existing agnostics, atheists, and ethno-religionists to Christianity and perhaps other religions, and even trigger proselytic activities between Protestantism and Orthodoxy.

3.3 Population growth estimates

About 4 million people live in the Arctic, half of whom are in the Russian Federation and about 1.3 million in the Nordic Countries, 130,000 in Canada and 650,000 in the US. The eight Arctic countries are Canada, Denmark with the Faroe Islands and Greenland, Iceland, Norway, Finland, Sweden, the Russian Federation and the United States. Arctic communities and indigenous people, in particular, rely on marine ecosystems which play an important role in their livelihood and well-being. In the Arctic Council, six indigenous organizations are recognized as parties to the Arctic Council. (Arctic Council Report).

The International Futures Model states that the population of Greenland and Iceland will increase by 50% in the next 50 years. The present trend of temporary workers being moved into projects in the Arctic will accelerate as jobs, commerce and industry get intensified. It is our first estimate that there will be a 2 to 3 times increase in the number of people moving

*Cf. <http://www.arctic-council.org>

from Russia, USA, and the European nations to other Arctic regions. The increase is estimated to be between 1.3 million and two million from the USA, between four and six million from Russia and between 2.6 and 3.9 million from Europe, making the population of the region double at least to eight million or more, up to twelve million. Severe problems in maintaining food and other built spaces may occur. Problems will be encountered in constructing shelter and industrial built space, ridding the area of waste and materials to withstand the winter conditions.

*Table 1: Population of Iceland over the next 20 years in millions
(from International Futures, Hughes, 2006).*

2010	2015	2020	2025	2030
0.321	0.3413	0.358	0.3711	0.3815

3.4 Health Issues

In past times, the Aboriginal health profile depended on naturally occurring parasitic-host relationships. As a result of European colonization and exploration, a plethora of diseases have evolved eg: *Trichinella spiralis* from consumption of uncooked polar bear and walrus, rabies from fox and dog, and brucellosis from infected deer.

In the coming decades, population in the Arctic region is projected to increase significantly due to the expected expansion of exploration for oil, natural gas and other resources. The increasing immigrant population in this region will have to adapt to the environment including weather and limited daylight in the winter. The infrastructure will have to be expanded to accommodate the growing population with access to drinking water, sewage, transportation and healthcare.

Emerging infectious diseases of the 21st century are raising multi-eyed medusal heads in the form of drug resistant *Streptococcus pneumoniae*, Helicobacter infection, hepatitis, *Haemophilus bacteremia* and meningitis. Coupled with immune-compromised individuals, pregnancy and neonatal demands comes an exponentially increased incidence of disease in healthcare workers, clinical laboratory staff and Public Health Officers, who provide the frontline for recognition, treatment and prevention of illness. These, of course, include methicillin-resistant *Staphylococcus aureus* (MRSA), respiratory syncytial viruses, syphilis, chlamydia, gonorrhea, drug-resistant tuberculosis, and Psychiatric disorders.

Future requirements will include increasing management of acute illness and injury from medical, surgical (even robotic and remote) sources, DNA diagnostics, and Stem cell research. The Arctic Council and Multinational Governmental Cooperation and Collaboration remain the Gold Standard for health in the Arctic region.

The authors thank Dr. Nancy Maynard, Senior Research Scientist in Cryospheric Sciences, NASA, and member, US Association of the Club of Rome, for sharing her insights on the biological resources and the Future of the Arctic. We also thank Professor Graeme P. Berlyn, Harriman Professor of Forestry at Yale University and Editor of the Journal of Sustainable Forestry, for sharing his wisdom about potential future events in the terrestrial arctic and its

interaction with the marine arctic. We have also had substantive interactions with Professor Sirka Heinonen, Professor at the Finnish Future Research Center, School of Economics, Turku University and member of the Finnish Association of the Club of Rome and interactions with a series of members of the Canadian Association of the Club of Rome. We thank Dr. Mary Jo Ryan Duncan of Canada and Ireland for reviewing this substantively, as well as Andrew Oerke, CEO of the Greater Caribbean Energy and Environment Foundation.

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Notes

1. "Greenland Takes a Step Towards Autonomy" *Spiegel Online* 26 November, 2008 <http://www.spiegel.de/international/europe/0,1518,592880,00.html>
2. John Sater, *The Arctic Basin* (Washington, DC: Arctic Institute of North America, 1969). See discussion.
3. E.C. Pielou, *Naturalist's Guide to the Arctic* (Chicago: University of Chicago Press, 1994).
4. R. Corell et al., "The Arctic Council's Assessment of the Arctic by the Pew Charitable Trust" <http://www.arcus.org/witness-the-arctic/2005/2>
5. Mikhail Todyshev, Tamara Semenova, et al., "The conservation value of sacred sites: a case study from northern Russia," in Einarsson, Niels; Joan Nymand Larsen, Annika Nilsson, Oran R. Young. (Eds) *Arctic Human Development Report* (Reykjavik: Stefansson Arctic Institute & Oddi Printing Co., 2004), 57-58.
6. Mircea Eliade, Willard R. Trask and Wendy Doniger, *Shamanism: Archaic Techniques of Ecstasy* (Princeton: Princeton University Press, 2004).
7. Niels Einarsson, Joan Nymand Larsen, Annika Nilsson and Oran R. Young, (Eds) *Arctic Human Development Report* (Reykjavik: Stefansson Arctic Institute & Oddi Printing Co., 2004), 57. See also, David C. King, *Cultures of the World: Greenland* (New York, Marshall Cavendish Benchmark, 2009), 91-96.
8. Christina Pratt, *An Encyclopedia of Shamanism: Volume 1* (New York: The Rosen Publishing Group, 2007), 27.
9. Einarsson, Nyman Larsen, Nilsson and Young, *Arctic Human Development Report*, 50.
10. Richard Labévière, *La bataille du Grand Nord a commencé* (Paris: Librairie Académique Perrin, 2008).
11. Todd M. Johnson, Rodney L. Peterson, Gina Bellofatto and Travis Myers, *2010 Boston: The Changing Contours of World Mission and Christianity* (Eugene: Wipf and Stock Publishers, 2012).

Bibliography

1. Arctic Council Declaration on the Establishment of the Arctic Council; *Joint Communiqué of the Governments of the Arctic Countries on the Establishment of the Arctic Council*.
2. Bergeron, Y. et al. (2004), "Past, current and future fire frequency in the Canadian boreal forest : implications for sustainable forest management," *AMBIO* 33, no.6: 356-360.
3. Bjerregaard, P. (2011), "The Arctic health declaration," *International Journal of Circumpolar Health* 70, no. 1
4. Bliss, L.C. et al. (1973), "Arctic tundra ecosystems," *Annual Review of Ecology and Systematics* 4: 359-399.
5. Briggs, Philip J. (1990), "The Polar Sea Voyage and the Northwest Passage Dispute," *Armed Forces & Society* 16, no. 3: 437-452.
6. Carey, John (1991), "Hot Science in Cold Lands," *National Wildlife* 29, no. 3: 4-10.
7. Corell, Hans (2009), "The Arctic: An Opportunity to Cooperate and Demonstrate Statesmanship" an Address at Vanderbilt University on February 2009.
8. Esseen, P. A. et al. (1997), "Boreal forests," *Ecological Bulletins* 46: 16-47.
9. Gerhardt, Hannes et al. (2010), "Contested Sovereignty in a Changing Arctic," *Annals of the Association of American Geographers* 100, no. 4: 992-1002.
10. Goodhart, Michael and Stacy Bondanella Taninchev (2011), "The New Sovereignties Challenge for Global Governance: Democracy without Sovereignty," *International Studies Quarterly* 55: 1047-1068.
11. Haftendorn, Helga (2011) "NATO and the Arctic: is the Atlantic alliance a cold war relic in a peaceful region now faced with non-military challenges?," *European Security* 20, no. 3: 337-361.
12. Hong, Nong (2011), "Arctic Energy: Pathway to Conflict or Cooperation in the High North" *Singapore International Energy Week* October 4, 2011.

13. Ikenberry, John G. (2010) "Who Owns the Arctic," *Foreign Affairs* 89, no.2: 154-155.
14. Kramer, Andrew E. (2010), "World Briefing Europe; Russia-Norway Pact on Sea Border" *The New York Times* September 16, 2010.
15. Kondro, W. (2009), "Arctic Health Research," *Journal de L'Association Médicale Canadienne* 180, no. 1: 29.
16. Laurberg, P. et al. (2012), "Vitamin D changes in an Arctic Inuit society in transition," *Bone Pages* 50, Supplement no.1: 104-105.
17. Parkinson, A.J. (2010), "Improving human health in the Arctic: the expanding role of the Arctic Council's Sustainable Development Working Group," *International Journal of Circumpolar Health* 69, no. 3: 304.
18. Pedersen, Torbjorn (2011), "International Law and Politics in U.S. Policy making: The United States and the Svalbard Dispute," *Ocean Development & International Law* 42: 120-135.
19. Pedersen, Torbjorn (2006), "The Svalbard Continental Shelf Controversy: Legal disputes and Political Rivalries," *Ocean Development & International Law* 37: 339-358.
20. Pielou, E.C (1994), *A Naturalist's Guide to the Arctic* Chicago: University of Chicago Press.
21. Schmiegelow, Fiona and Mikko Mönkkönen (2002), "Habitat Loss and Fragmentation in Dynamic Landscapes: Avian Perspectives from the Boreal Forest," *Ecological Applications* 12: 375-389.
22. Schulze, E.D. et al. (2000), "Managing Forests After Kyoto," *Science* 289, no. 5487: 2058- 2059; Myneni et al., *Proceedings of the National Academy of Sciences* 98: 14784-14789, 2001; Gorham, *Ecological Applications* 1: 182-195, 1991.
23. Smith, Reginald (2011), "The Arctic, A New Partnership Paradigm or the Next Cold War?" *Joint Force Quarterly* No. 62.
24. United Nations Convention on the Law of the Sea, Montego Bay, 1982.
25. U.S. Department of State Diplomacy in Action, <http://www.state.gov/t/pa/prs/ps/2011/05/163285.htm>.
26. Ying, Ding (2009), "The New Enclosure Movement A Russian claim to Arctic territory starts another international dispute over polar land grabs" *Beijing Review* August 23, 2009.

A Call for Articles

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Book Review — 2052: A Global Forecast for the Next Forty Years Report to the Club of Rome

By Jorgen Randers (Professor of Climate Strategy, BI Norwegian Business School, Oslo).
White River Junction VT: Chelsea Green, June 2012, 392p, \$24.95pb. (www.2052.info)

Reviewed by Michael Marien

Fellow, World Academy of Art and Science;
Director, Global Foresight Books

2052: A Global Forecast for the Next Forty Years is a report to the CoR commemorating the 40th anniversary of *The Limits to Growth*, written by one of the four original authors. This broad forecast is “an informed guess tracing the big lines in what I see as the probable global evolution toward 2052...the most likely global roadmap to 2052 so that I would know what I am in for.” Since publication of *The Limits to Growth* in 1972, “humanity remains in solid overshoot...and we can discern the early signs of the coming gradual destruction of the ecosystem” (p.xv).

1. Five Big Issues toward 2052

“The big question is how fast the transition to sustainability will happen...the sustainability revolution has started, but is still in its infancy” (p13). The transition will require a fundamental change to a number of systems that govern current world developments. The next 40 years will be strongly influenced by how we handle five central issues:

- ***The End of Uncontrolled Capitalism:*** “slow and insufficient response to our challenges will dominate”; old-fashioned capitalism will survive in parts of the world, but will be strongly modified elsewhere;
- ***The End of Economic Growth:*** continuing technological advance will come to our partial rescue, but lack of space and cheap resources will force solutions with a lower ecological footprint to fit within the carrying capacity of the planet;
- ***The End of Slow Democracy:*** the fundamental question is whether democracies will agree on a stronger state and faster decision-making before we run into the brick wall of self-reinforcing climate change;
- ***Intergenerational Conflict:*** the era of generational harmony will come to an end, leading to slower economic growth and a smaller pie to share;
- ***The End of Stable Climate:*** negative impacts will be significant, but not disastrous before 2052; there will be more droughts and floods, and sea level will be 0.3 meters

higher; “self-reinforcing climate change will be worry number one, with methane gas emissions from the melting tundra leading to further temperature increase, which in turn will melt even more tundra” (p47); the world will still be operational, but with higher operating costs and scary prospects for the rest of the 21st century.

2. The Global Forecast

Several *Highlights* of the forecast:

- a) “global population will stagnate earlier than expected because fertility will fall dramatically in an increasingly urbanized population”;
- b) “resource and climate problems will not become catastrophic before 2052” due to increased social investment, but there will be much unnecessary suffering;
- c) the short-term focus of democracy and capitalism will ensure that “wise decisions needed for long-term well-being will not be made in time”;
- d) “global population will be increasingly urban and unwilling to protect nature”;
- e) the impact will differ among five regions analyzed here: “the most surprising loser will be the current global economic elite, particularly the US...China will be the winner” (p355).

Some *Details* of the forecast:

- * Disparities: The world in 2052 will be one of huge regional and class differences; there will be social friction because of distributional inequity; regional variations in increased temperature will range from 0°C to >4°C;
- * World Population: Continuing decline in fertility, only partly offset by a continuing rise in life expectancy, will cause “global population to reach a maximum of some 8.1 billion people in the early 2040s,” thereafter “declining at 1% per year and it will be back to current levels (7 billion people) by 2075” (pp62-64);
- * Workforce: Potential workforce will follow the pattern of population: it will first grow, then peak, and then start to decline; “the number of people aged 15 to 65 will peak some five years before the peak in total population”; thus, the support burden will stay more or less constant because the rise in the number of the elderly population will be offset by a decline in the number of children;
- * Productivity: Productivity growth will peak in the 2020s and then decline toward the middle of the century; in 2052, GDP per person will grow at only 1%/year; productivity growth will be hampered by erratic weather and growing inequity that will disturb the peace;
- * GDP Growth: World GDP will be 2.2 times as big as today, enabling higher average consumption rates but also resulting in higher emissions and more rapid depletion of resources; world GDP will start to decline just after 2052, despite dramatic increases in resource and energy efficiency;

- * Investment Growth/Consumption Decline: Emerging problems will mean increased investment, forced or voluntary; this will take up a larger share of GDP, lowering the share available for consumption; investment is currently 25% of GDP and will need to be increased to >30%; “global consumption will grow toward stagnation in 2040 and begin to fall around 2050”;
- * Rising Costs: New costs will emerge, e.g.: substitutes for scarce resources, solutions for dangerous emissions, replacements for ecological services such as water that were formerly free, protections against future climate damage like sea-level rise, rebuilding real estate and infrastructure destroyed by extreme weather, and maintaining armed forces to defend resource supplies and fight off immigration; the cost of such developments “could easily exceed 10% (of world GDP) in the long run of a badly handled future”;
- * Energy Use: About 87% of today’s global energy use is supplied by coal, oil, and gas; energy intensity will fall by a third by 2052 while the global economy doubles—thus energy use will grow by 50%;
- * Changing Energy Mix: Use of conventional oil has probably peaked, and peaks in both coal and gas use are expected before 2040 due to very rapid increase in use of renewable energy, which will grow from 8% of energy use in 2010 to 37% in 2050 (this shift will be slowed by the cheap intermediary solution of replacing coal with gas); the nuclear share of world energy will be one-half of today’s contribution—below 3%;
- * Emissions: CO₂ emissions from energy will peak in 2030, but overall emissions from energy use will still be 40% above global emissions in 1990; carbon capture and storage (CCS) will have a limited role in reducing CO₂ emissions in 2052, dwarfed by increases in energy efficiency and renewables;
- * Rising Temperature: “Average temperature will go from plus 0.8°C relative to preindustrial times in 2012 to plus 2.0°C in 2052, and a maximum of plus 2.8°C in 2080” (p241). In 2052, “there will be visible climate damage and growing worry about the future” (p119);
- * Urbanization: “More people will seek shelter inside modern city walls, leaving a small rural population to fend for itself against increasingly violent weather and ecosystem change”;
- * Adaptation: “By 2052, voters in the well-governed part of the world will have seen enough damage to be genuinely concerned about the possibility of self-reinforcing climate change in the last half of the century”; a tremendous effort will finally be under way to reduce emissions for the benefit of all, in parallel with an extraordinary effort to adapt to the new climate;
- * Food: Production will continue to grow in the decades ahead, and *Homo affluensis* will have moved down the food chain to less refined foods; but food will be unevenly distributed then as now, and many will starve; as we get closer to 2052, agriculture will be increasingly affected by climate change; use of genetically modified organisms will increase but prove unsustainable in the long run;

- * Managed Degrowth: Forward-thinking regions within some nations will increasingly focus on managing their inevitable degrowth by trying to build regional resilience focusing on local food and energy;
- * Sustainability Paradigm: Growth in GDP will remain a central ambition in most countries for many decades; “the sustainability crowd is still a tiny minority, and the paradigm shift is probably several decades into the future”; by 2052 global society will increasingly be seeking sustainable well-being based on planet-friendly energy and resources;
- * Modified Capitalism: Global society will interfere, to some extent, with operation of the free market to ensure that investments flow toward what is publicly needed rather than what is most profitable; thus, under “modified capitalism,” a stronger role for wise government;
- * China as World Leader: “China will be the world leader in 2052...the premier driving force on the planet,” with a population 3.5 times bigger than the US, an economy nearly 2.5 times larger, and consumption >70% of the US equivalent (the US could maintain its hegemony, but its system of governance does not seem capable of quick, bipartisan decision making);
- * Jobs: There will be as many jobs in the future as in the past, relative to the workforce; “I see little reason why there should be higher levels of unemployment in the future”;
- * Wild Cards: Some wild cards: abundant oil or gas making new renewables less competitive, a financial meltdown, nuclear war, a deadly disease killing two billion people, collapse of ecological services such as bee pollination, counter-revolution in China leading to lower emissions and reduced investment in green technology, a citizen’s rebellion in the US that fundamentally changes the tax laws, a dedicated global effort to stop climate change.

3. Regional Futures

- * The US: The economy will grow at an average rate of only 0.6%/year over the next 40 years (reaching zero by 2052), because it is already a mature economy with high productivity, it has not been investing sufficiently (investment is only 16% of GDP—less than two-thirds the 24% global average), and the US must repay the debt run up over the last decades; as a consequence, “per capita consumption levels in 2052 will be some 10% lower than in 2010” (p267); energy use will be more or less constant, with a huge shift from coal and oil to gas, and renewables as the largest source of energy by 2052; emissions from energy use will decline nearly one-half by 2052—35% below 1990 levels;
- * China: “Tremendous economic growth” is expected over the next 40 years, averaging 3.5% per year but much higher in the next 20 years. Despite high savings and investment (currently at >35%), consumption per capita will grow fivefold by 2052. But China’s “footprint on the planet will be substantial,” and climate change will create significant problems of sea level rise and desertification; energy use will more than double by the 2030s; agricultural output will increase by 25% before it peaks in the 2030s and starts to decline;

- * OECD-less-US: The old industrialized market economies other than the US have more than twice as much population as the US; population will remain constant until 2025 and then start a slow decline so that it will be 10% lower in 2052 than today; aging will lead to an increase in the support burden by some 10% after 2030; total GDP will peak in the early 2030s at some 15% above current level; very fast growth in renewables will reduce gas use after 2035, and the nuclear industry will be in steady decline; overall emissions will be 55% below the current rate and 50% below 1990 emissions;
- * BRISE: Brazil, Russia, India, South Africa and ten big emerging economies (Indonesia, Mexico, Vietnam, Turkey, Iran, Thailand, Ukraine, Argentina, Venezuela, and Saudi Arabia) had a total of 2.4 billion people in 2010 (half in India) and will peak by 2052 at well below 3 billion; collective GDP in the 14 countries will triple by 2052, with per capita GDP growing from \$6K to \$16K; emissions from fossil fuels will not plateau until the 2040s despite efficiency increases; the region is subject to potential climate disasters (e.g., inundation of SE Asian countries by melting glaciers in Tibet, drying out of the rain forest in Brazil, insects killing the boreal forest in Russia); in sum, the region will be “in lively development” over the next 40 years, but with widely varying quality in governance;
- * Rest of the World: This eclectic blend of 186 countries had a total population of 2.1 billion in 2010, which will peak in the 2050s at 3.1 billion due to education and contraception; GDP will grow three times its current size by 2052, and GDP will grow from \$4K to \$8K. Food production will outpace population growth, and the energy system will grow gradually. The area of cultivated land will start to decline around 2040, and the ROW region will need food imports by 2052.

4. “Overshoot and Collapse” Updated

The concern about “overshoot and collapse” was first articulated in the 1972 *Limits to Growth* report. This forecast chooses “Scenario 3” from *The Limits to Growth*, which describes a shortage of nonrenewable resources and dangerous pollution postponed until the mid-21st century due to application of technology. “The story of the 2052 forecast is one of overshoot caused by delayed societal response to greenhouse gas emissions being allowed to increase beyond sustainable levels for generations. It is a story of lower consumption growth (and in the rich world consumption decline) resulting partly from the costs of trying to mitigate the climate problem” (p305). The world will experience numerous cases of overshoot and decline before 2052, but it will not experience overshoot and collapse before 2052, when average per capita consumption will peak, and global average temperature will surpass the danger threshold of 2°C. This forecast of developments to 2052 is “quite gloomy,” but “not catastrophic” (p323).

The human ecological footprint has expanded continuously since 1972, and will become heavier. The human footprint can expand beyond planetary limits. When the footprint approaches a limit, society normally reacts, but only after some delay. “Currently the human demand on the biosphere exceeds the global bio-capacity by some 40%” (p311). The world of 2012 is in overshoot, but this is a temporary phenomenon. In each instance of overshoot, humanity has to move back into sustainable territory, either through “managed decline” or

by “collapse induced by nature.” The world has not yet experienced large-scale environmental collapse. The challenge is solvable in principle, but hard to address in practice.

5. What We Should Do

The final chapter discusses what “global society ideally should have done”: increase energy efficiency, shift to renewable energy, stop destroying forests, and invest in carbon capture and storage. All of these actions are technically feasible and not especially expensive. If properly executed, the effort would not reduce employment. With a lower discount rate and more realistic pricing, many climate-friendly solutions are competitive at current prices.

“It took 30 years from when the current success measure of GDP was invented in the 1930s to regular use for policy guidance in the 1960s; we now need to institute “monthly measures of national well-being in much less than 30 years.”

“The saddest aspect of my forecast is probably the fact that there will be no wage rise—and possibly a decline in real disposable income—in the rich world over the next 40 years... for most who are younger and poorer, this will seem like an ominous future” (p327). The answer is to decide on a different success criterion, choosing well-being rather than material gain as the appropriate goal. It took 30 years from when the current success measure of GDP was invented in the 1930s to regular use for policy guidance in the 1960s; we now need to institute “monthly measures of national well-being in much less than 30 years” (p328).

This said, 21 provocative “pieces of personal advice” are offered:

- 1) Focus on satisfaction as a core goal, rather than income (e.g., maximizing life satisfaction as long as income stays above a certain threshold);
- 2) Don’t acquire a taste for things that will disappear (the future will be urban, dense, and crowded; don’t develop a taste for life in suburbia);
- 3) Invest in great electronic entertainment and learn to prefer it (virtual worlds will increasingly compete with the real world for our attention; fascination with the real appears to be an acquired taste, and tastes are changing);
- 4) Don’t teach your children to love the wilderness (humanity is eliminating wild nature from the planet; those who have been taught to love wilderness will have fewer places to go, farther away; however, love of untouched nature is largely an acquired taste);
- 5) If you like great biodiversity, see it now (despite continued efforts to conserve and restore biodiversity, climate change will take its toll);
- 6) Visit world attractions before they are ruined by the crowd—or increasing social unrest (cultural diversity is seemingly disappearing even faster than biological diversity);
- 7) Live in a place that is not overly exposed to climate change (the general picture is well-known: avoid traditional flood zones, sea level locations, areas that are already too hot or too dry, and mountains that are currently frozen—which will “give off landslides when the permafrost lifts 200 vertical meters by 2052);

- 8) Move to a country that is capable of decision-making (democracy and the free market have solved a number of complex problems in past generations, but society will be facing problems not easily solved by these well-tested means, notably global warming; thus “choose as your new homeland a country that is capable of acting proactively in the decades ahead”);
- 9) Know the unsustainabilities that threaten your quality of life (map out the problems your location will face in the next decade or two—both physical threats such as erratic weather, brownouts, and migration flows and non-material threats such as higher taxes, new legislation, and cultural decline);
- 10) Get an education (it guarantees a more interesting life and ensures greater choice; if unemployed, fight for your rights, because “unemployment is a distributional issue” that can always be solved by changing national policy, e.g.: tax the rich and/or print more money so as to create public employment);
- 11) Encourage your children to learn Mandarin Chinese (more than 1.5 billion people already know this language, and it is important to have “direct access to the future hegemon”);
- 12) Stop believing that all growth is good (if you want to stay happy in the next 40 years, refine and revise your thinking about growth, because “a number of things are going to decline” for better and worse; “in the future growth won’t be generally good”);
- 13) Remember that fossil-based assets will lose their value (as global energy use peaks around 2040 and energy efficiency increases);
- 14) Invest in things that are not sensitive to social unrest (in that tensions will rise in the next several decades because of mounting inequities);
- 15) Do more than your fair share to promote sane perspective, policy, and practice in your communities, companies, and households;
- 16) In business, explore the most urgent unsustainabilities on the corporate radar—the first things that will go seriously wrong if the world evolves according to this forecast (the solution is not always unprofitable, e.g. Philips moved from producing cheap but energy-intensive light bulbs to much more intensive low-watt bulbs);
- 17) In business, don’t confuse growth in volume with growth in profits (e.g. windmills and photovoltaics are fast-growing markets but do not guarantee a profit because of too many investors);
- 18) In politics, support only initiatives with short-term benefits if you want reelection. The only leaders able to force wise long-term policy onto their people seem to be the EU and China’s Communist Party;
- 19) In politics, remember that the future will be dominated by physical limits (future politicians will have to use much time on issues of depletion and pollution—issues that won’t go away for a long time, such as land for agriculture and forests, freshwater, oceans; the aim is to reduce energy intensity and climate intensity);
- 20) In politics, accept that equal access to limited resources will trump free speech (in a resource-constrained world, allowing scarce resources to be in the hands of a minority will lose legitimacy; “over the next 40 years politicians will increasingly be pushed to

consider the rights of future generations...hopefully by the end of the century there will be an International Court of Intergenerational Justice” (p350); in an increasingly crowded world, “collective well-being will be more important than individual rights”);

- 21) As a final word of encouragement, “don’t let the prospect of a suboptimal long-term future kill your hope...even if we do not succeed in our fight for a better world, there will still be a world with a future—just less beautiful and less harmonious than it could have been” (p351).

6. Comment

This 40-year forecast is very useful and highly provocative. It is particularly useful for pointing to the necessary rise of social investment in response to global warming that will displace some consumption. The 21 pieces of advice for individuals and organizations are especially thought-provoking. A close reading is strongly advised for anyone concerned about world futures and the turbulent decades ahead, although everyone will surely find some points of disagreement.

At first glance, this report appears to be unique. However, it is useful to contrast **2052** with **2025: *Scenarios of US and Global Society Reshaped by Science and Technology*** by Joseph F. Coates, John B. Mahaffie, and Andy Hines (Oakhill Press, 1996/508p), an equally audacious work that made 107 generally optimistic assumptions about the future, mostly about technological progress (e.g, many natural disasters mitigated or prevented by 2025, and, less probably, 120mpg cars in widespread use). Global warming is mentioned, but is not a central theme as in Randers' forecast. In Chapter 8 on “Managing the Planet,” Coates et al. offer a hopeful scenario where “sustainability has emerged as a core global value” (p227), which is far from the case today. Could Randers also be overly optimistic?

Randers' forecast is assisted (but perhaps complicated) by thirty-four “2052 Glimpses” of 3-4 pages each by writers such as Herman Daly, Jonathan Porritt, Mathis Wackernagel, John Elkington, Paul Gilding, and original *Limits to Growth* co-author William W. Behrens. These brief contributions, which Randers endorses fully or in part, appear throughout the text, and are listed together on pp359-365, but not in the table of contents.

Most important, some of the **2052** assumptions and oversights deserve highlighting and critique.

The most questionable assumption is the startling core forecast of world population peaking at 8.1 billion in the early 2040s, and then declining to the present level of 7 billion by 2075. Randers justifies this by assuming rapid decline in fertility rates offsetting more gradual decline in mortality rates. But decline in fertility may be slower than expected in Muslim areas and among religious fundamentalists, while decline in mortality may be faster by conquering cancer and other diseases, and perhaps even aging itself. In contrast, the just-issued **2012 World Population Data Sheet**, by veteran demographer Carl Haub of the Population Reference Bureau, projects world population at 9.624 billion in mid-2050, a slight increase from Haub's 2010 projection of 9.485 billion (see Global Foresight Books' Book of the Month, Aug 2010). The difference of >1.5 billion in Randers' and Haub's forecasts is significant, and deserves debate. (Also note that Haub's forecast for 2050 has been slowly creeping upward over the last decade!)

Randers' assumption of 2°C temperature rise by 2052 with a maximum of 2.8°C in 2080 may be somewhat conservative. See, for example, the discussion by Clive Hamilton in *Requiem for a Species* (Global Foresight Books' Book of the Month, May 2010), reporting that the new consensus among a select group of worried climate scientists, revised upward, is for a warming of a very worrisome 4°C or more by the 2070s or 2080s, or possibly the 2060s. Hamilton also cites Hans Schellnhuber, director of the Potsdam Institute for Climate Impact Research, warning that if much of the methane trapped in permafrost is released, “we will be toast.” Randers makes some reference to this trend (which is already apparent), but is more restrained.

Randers does briefly mention several negative “wild cards” such as methane (more accurately a “not-so-wild card” possibility, if not a probable development). But wild cards can also be positive, and Randers does not mention possible game-changing contributions that might be made by nanotechnology and new energy technologies such as ultra-low-cost designed biofuel from algae, or small modular nuclear reactors. Similar to widespread release of methane, the possibility of major new technology is also a “not-so-wild card”— a critical distinction that, unfortunately, is not made in the futures literature (a major development of 10-30% probability is far different than a “wild card” of literally 2% probability, or a “black swan” event that is even more improbable).

Randers' assumption that unemployment will more or less stay at current levels should also be questioned, as well as his lack of attention to potential climate tipping points.

Anyway, despite these complaints, Randers' forecast deserves widespread attention, and will hopefully accelerate the long-term sustainability trend and rekindle attention to the limits to undifferentiated growth as defined by obsolete industrial-era measures.

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Money, Debt, People and Planet

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Abstract

The widespread failure to understand money creation plays a key role in the current policy impasse. In a world ruled by money, this failure disempowers and prevents serious consideration of alternatives. The key reasons why we are not moving faster in tackling the global crises are, we are told, because it is too expensive, there is not enough money, it is not (yet) profitable enough to do etc. Within the current global monetary framework, this is largely true. Therefore, any realistic plan to change course before we are overwhelmed by the inter-linked environmental, social and security threats facing us, is to change this framework to ensure that money becomes our servant again. The current debt crisis offers an opportunity to replace discredited debt-based money created by private banks in their interest with government-created debt-free money benefitting all, which can be used to fund a global emergency programme.

“We know now that government by organised money is just as dangerous as government by organised mob.” — President F.D. Roosevelt, 31.10.36

“The essence of the contemporary monetary system is creation of money, out of nothing, by private banks’ often foolish lending. Why is such privatisation of a public function right and proper; but action by the central bank to meet pressing public need, a road to catastrophe?”
— Martin Wolf, ‘Financial Times’, 9.11.10

“The obvious way to reduce our public and private debts is to stop having all our money created as debt.”
— James Robertson, ‘Future Money’

The widespread failure to understand money creation plays a key role in the current policy impasse. In a world ruled by money, this failure disempowers and prevents serious consideration of alternatives.

We have now reached a tipping-point where the ruling monetary belief systems are destroying economic well-being and social peace as well as threatening the very survival of civilisation and even life on earth. We have globalised our economies — but not our responsibilities. The externalities we have dumped on our global

“Over the past decades a wealthy minority has used those tools — finessed by economists, politicians and propagandists in their service — to vastly increase their wealth at the expense of our common good and future, claiming that there is no alternative to their “Washington Consensus”.”

ecosystems — and on future generations — are now returning to remind us that the much recent “growth” is only debt, fuelled by natural (and social) capital destruction.

We are ruled by cost-benefit-analyses but it is important to remember that these are not neutral but tools in the hands of those who use them. Every economic calculation, every bottom line depends on what has been included or omitted from the top lines of the equation! The decision on what to include and omit is a function of power. Over the past decades a wealthy minority has used those tools — finessed by economists, politicians and propagandists in their service — to vastly increase their wealth at the expense of our common good and future, claiming that there is no alternative to their “Washington Consensus”. But, to quote US author Thomas Friedman, “hidden hand of the market will never work without a hidden fist.”¹

This fist is US (military and ideological) power. The belief that this power has already shifted to Asia is mistaken. The emerging Asian (and other) economies have joined an international structure of institutions designed primarily in the interests of Wall Street.

On top of this structure stands the US Dollar as the global reserve currency. The huge seigniorage and other advantages this gives the USA have recently been noted, e.g. in China,* Malaysia and Brazil. While hundreds of millions of Chinese worked very hard for many years to earn the huge dollar reserves now held by their country, the USA just “printed” a similar amount through its Quantitative Easing programme, thus devaluing everyone else’s dollar holdings.

Since the overall economic growth rates began to fall in the West in the 1970s, the richest Americans have increasingly opted out of their societal responsibilities. From 1979-2005 the wealth of the richest 1% increased by 200% while that of the poorest 20% grew by 1%! The number of women living in poverty and extreme poverty in the U.S.A has reached record levels.[†]

This unprecedented bottom-up wealth transfer was made acceptable to the majority by encouraging them to go massively into debt, until the first bubble burst a few years ago. When it became clear that the real economy could no longer achieve the growth rates required to keep the majority from questioning the ruling economic order, debt was encouraged to create the illusion of continued and growing mass prosperity. The huge debt over-hang continues, paralysing and destabilising governments, economies and societies. It is predicted that every Irish family of 4 will owe € 200,000 by 2015.[‡]

And more is to come: The historian Niall Ferguson describes pension and social security entitlements in the USA and many European countries as “a vast claim by the generation who are retired or about to retire on their children and grandchildren who are obligated by law to find the money in the future by submitting either to substantial increases in taxation or to rastic cuts in public expenditure.”[‡]

* In October 2009 United Nations Under-Secretary-General for Economic and Social Affairs Sha Zukang called for a new global reserve currency to end the US dollar supremacy, saying “Important progress in managing imbalances can be made in reducing the reserve currency countries ‘privilege’ to run external deficits in order to provide international liquidity. It is timely to emphasise that such a system also creates a more equitable method of sharing the seigniorage derived from providing global liquidity.” (Istanbul, 5.10.09, see www.un.org)

† See National Women’s Law Center, September 2011. “Analysis of New 2010 Census Poverty Data” <http://www.nwlc.org/analysis-new-2010-census-poverty-data-%E2%80%93-september-2011>

‡ See *Sunday Times* 17.6.2012.

But, in reality, every society decides autonomously how to share what it produces between the generations. Unpayable past debts are not paid, as many historical examples show. The dislocation resulting from such debt cancellations, restructurings, “haircuts” etc. can be substantial but are soon overcome when the real economy is freed from excessive debt and interest burdens and able to function again. Bankrupt banks can be nationalised and recapitalised, giving the tax-payers a quid-pro-quo. The claim of German economists like Hans-Werner Sinn that “our children will be forced to go to Southern Europe to take back our money” is absurd. The Euro crisis loans have not ended up with the citizens of Greece, Spain etc. but have been used to repay past loans and recapitalise banks, thus transferring (unpayable) claims from lenders and share-holders to tax-payers.

“In reality, every society decides autonomously how to share what it produces between the generations.”

What makes the coming financial debt deleveraging much harder this time are growing environmental debts. It has been calculated that there is a \$20 trillion bubble of “stranded assets” which have not yet been accounted for but which will have to be written off because of environmental constraints, e.g. water shortages and the need to avoid catastrophic climate change (Bill McKibben).

The conventional political answer is that such issues must wait until “growth” has resumed, making us rich enough to better deal with them. But this is a fundamental error. If business-as-usual growth does resume, it will become increasingly un-economic, consumed by repairing and protecting from its own consequences. Economic “externalities” can no longer be ignored when they dismantle nature’s security and immune systems which underpin our lives, societies and economies. Climate change is already having a global impact on food supplies. The impact is particularly harsh on rural women and their families in low-income countries, as women already spend many more hours collecting scarce water and providing sufficient food for their families than in past decades.*

The global temperature increases predicted under business-as-usual growth scenarios threaten water and food catastrophes within decades and to make our planet literally uninhabitable within a few generations! There would be no place left to enjoy the fruits of this “growth”...

The Western debate about these momentous issues is still surreal. Studies of growing global resource constraints (e.g. Chandran Nair’s “Consumptionomics”) are taken seriously in China and the reason why it is willing to pay more for future reserves than they are “worth” according to the discount rates used by Western economists.

As Pavan Sukhdev of UNEP has noted, such discount rates assume that we will all be richer in future. If this is not realistic, rates should be negative, to reflect the higher future value of scarcer resources. However, Western elites still prefer to listen to the Danish statistician Lomborg who assures them that the future costs of resource and environmental constraints can be paid from the proceeds of continued “growth”.† But human development and productivity require functioning ecosystems.

*See e.g., Lauterbach, Claire and Sarah Bibler, October 2012. “Gender, IFIs and Food Insecurity Case Study: Zambia.” <http://www.genderaction.org/publications/zambiafoodsecurity.pdf>; Gender Actions 2011 Governing Climate Funds: What Will Work for Women? <http://www.genderaction.org/publications/11/climate-funds-for-women.html>

†See *Foreign Affairs* Sept-Oct 2012.

"Money against performance is not inflationary... Unutilised productive resources can and must be put to work to regenerate our economies, societies and eco-systems."

We are not as rich as we imagined. Many pension and investment fund valuations are now based on unrealistic real economy growth scenarios. Savings only transfer wealth to the future to the extent they can be and are invested to produce new wealth. We cannot eat speculative bubbles.

So, how can we dig ourselves out of this hole? The first step has to be to stop digging deeper! We cannot reduce financial or environmental debts by continuing to increase them.

Debts and assets are always equal and reducing one means reducing the other! Receiving interest requires a debtor paying it. In a debt-based money system reducing debts also reduces the money supply. Government debt reductions now demanded

by "the market" are larger and will have to last longer and produce more "austerity" i.e. social capital destruction, than our societies are likely to tolerate. Already these austerity measures are taking a huge toll, especially on women, who have historically taken on the increased work burdens of caring for the sick and elderly in face of cuts to social spending on health, education, and child and elderly care. Moreover, when societies fail to invest in caring for and educating children, they are not only harming quality of life; they are failing to invest in human capacity building — which in the long-term is economically disastrous.³

There is only one way out of this dilemma, namely for governments to issue new money and spend it directly into the economy to replace the debt money destroyed by deleveraging. With proper controls, there is no reason why this should be inflationary, despite the scary stories from commentators who are uninformed about the actual history of the Weimar and other historical hyperinflation episodes. Money against performance is not inflationary. If supply and demand grow together, prices remain stable. Central Banks have many tools to ensure that this remains the case.

The long-term costs in missed output, lost skills and health caused by rising unemployment now threaten the social peace in many countries. Unutilised productive resources can and must be put to work to regenerate our economies, societies and eco-systems.

The new money created will be equity, not new debt. It can be issued by the right of governments' seigniorage (money-issuing) powers, as stipulated e.g. in the US Constitution Art.1, Section 8, to be spent to promote the general welfare, e.g. on education and infrastructure. Governments can also use it to make interest-free loans, e.g. to local authorities.

There are several ways to reduce pre-existing government debts. Debts to the Central Bank, i.e. de facto to itself, can either be cancelled or — if preferable for accounting purposes — exchanged for 100-year interest-free bonds.

Tax-payers would clearly be major beneficiaries of this reform. It would ensure that the income from money creation goes to the whole community and not just to a small minority of bankers, (who would need to borrow from the state to cover deficits instead of vice versa). It is not unprecedented. Thus, it was only from 1973 that national (and later EU) law

"It is often said that governments should not "pick winners". But this is exactly what governments have done in favour of the financial sector."

obliged the French government to borrow from the financial markets to fund itself. It has been calculated that, under the pre-1973 legislation, the French deficit would today be less than 9% of GDP instead of almost 80%.⁴

It is often said that governments should not “pick winners”. But this is exactly what governments have done in favour of the financial sector, passing numerous laws regulating in its favour and legalising the weapons which banks have used not just to create excessive debt money and destabilise our economies but to attack the governments which recently saved them!*

We must deleverage our accumulated debts before our economies collapse and our planet is irretrievably mutilated — for nature cannot match the profit requirements of compound interest rates! Debt money discounts the future, making its protection and preservation “unaffordable”. Even using low discount rates, it can thus be “proven” that it is “uneconomic” to preserve natural wealth for future generations. Prominent Anglo-Saxon economists have seriously argued that climate-change is mainly expected to damage agriculture which is only a small percentage of GDP in rich countries and can thus be easily compensated by “growth” in other sectors of the economy...

Debt reduction costs will hit the rich as well as pension and insurance funds, as they together hold most of the financial shares and other corresponding assets. The resulting money destruction is likely to further postpone urgent environmental investments as “currently unaffordable”. It is therefore imperative that debt deleveraging is accompanied by new debt-free money creation. Only thus can we kick-start a green industrial revolution of entrepreneurship and job creation in time, restoring the health and wealth of both the people and the planet!

This proposal is not an alternative to taxes on financial transactions, CO₂ emissions and on other uses and abuses of the global commons.[†]

However, these proposals are mired in ideological disputes and it is unclear how much income they will generate, as they are also intended to shrink the assets (financial transactions, CO₂ emissions etc.) to be taxed. Other solutions are either not on the scale of the challenge (e.g. local and regional currencies), a recipe for further debt bubbles or ineffective, e.g. Central Bank funding used by banks to buy back their own debt.[‡]

This proposal may appear radical because of the power of the promoters of current monetary dogmas. However, there is now an increasing interest in such outside-the-box thinking even in conservative institutions which are aware that the “wealth” created by the current financial system is increasingly illusory. Thus, the IMF recently (August 2012) published a working paper entitled “The Chicago Plan Revisited”, arguing that replacing the current system of money mainly created as debt by private banks with government-issued debt-free money would have numerous economic advantages by reducing public and private debts, stabilising business cycles, eliminating bank runs etc.

* Between 1998 and 2008, i.e. mostly under a red-green government, Germany passed 38 laws and regulations for the “promotion and liberalisation of the financial markets and the banking sector”. This was justified as facilitating “growth”.

† Major currencies are traded by one global automatic system, regulated by the Federal Reserve Bank of New York. An FTT does not require the agreement of all countries, only a few lines of software code added to this payment system.

‡ See *Financial Times* 11.10.2012.

Recent studies by the Boston Consulting Group (“Back to Mesopotamia?” September 2011)* and the German Institute for Economic Research (“Deutsche Bank Research”, 24.8.12) have presented the case for major wealth levies to reduce debt burdens.

This is because these institutions recognise that the only alternative to orderly debt deleveraging is an even more costly disorderly collapse and wealth destruction. Much “wealth” held by creditors now consists of claims which can never realistically be repaid. Assets and liabilities of financial conglomerates consist mainly of liabilities and assets of other conglomerates.

Without a focussed immediate injection of debt-free government money to kick-start the greening of our economies currently stalled by austerity programmes, the required massive financial debt reductions are likely to cause a global depression and social collapse as well as delay, perhaps beyond points of no return, the measures now urgently needed to protect and restore global planetary health.

Cornerstones of the (labour-intensive!) global emergency programme to be funded with new debt-free money would be

- the rapid expansion of renewable energy production, as every day of delay threatens climate chaos and burns fossil fuel raw materials with valuable alternative uses;
- water conservation and food security programmes that emphasize women and the poor as stakeholders in natural resource management;
- the regeneration of our cities, transport systems and buildings;
- the protection of fish stocks and other threatened species;
- investments in sustainable forest management;
- providing education for all and implementing other (much behind schedule) UN Millennium Development Goals;
- strengthening women’s rights to ensure that every child born is wanted;
- projects enhancing global security, governance and trust.

The World Future Council invites interested partners to join us to explore the institutional and legal steps required to implement these proposals.

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Notes

1. Thomas Friedman, “A Manifesto for the Fast World” *New York Times* March 28, 1999 <http://www.nytimes.com/1999/03/28/magazine/a-manifesto-for-the-fast-world.html>
2. Peter Boone and Simon Johnson, “Irish Worries for the Global Economy,” *Want Less Blog* <http://thesmartmoney.wordpress.com/2010/09/03/irish-worries-for-the-global-economy-by-peter-boone-simon-johnson-at-base/>
3. Riane Eisler, *The Real Wealth of Nations: Creating a Caring Economics* (San Francisco: Berrett-Koehler, 2007).
4. Bernard Lietaer et al., *Money and Sustainability: The missing link* (Axminster: Triarchy press, 2012), 125-127.

*The reasons given for regular debt forgiveness in ancient Mesopotamia were “freedom, justice, equity and that the strong might not oppress the weak”.

The Power of Money

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Abstract

Although we all use money every day, the nature and functioning of money seem shrouded in commonplace myths and ancient mysteries. Money plays a central role in economics today, yet rarely do we come across a serious, informed discussion of what money really is and what role it plays in the development of society. Money is a remarkable human invention, a mental symbol, a social organization and a means for the application and transfer of social power for accomplishment. This article is the first in a series of articles exploring the origins, nature and functioning of money and its creative power by comparing money with two other pre-eminent social institutions – language and the Internet.

Money, according to the adage, makes the world go round. And just now the world appears to be spinning wildly out of control, escaping from its traditional orbit and raising the specter of a head-on collision with economy, democracy and the welfare of humanity. Concern with the prevailing monetary system has given rise to calls for abolition of the current system of national currencies, a return to the gold standard, elimination of debt money and interest, reversion to local currencies that were prevalent in earlier centuries, and invention of new forms of money such as energy currency or earth currency linked to productive capacities and natural resources. The plethora of ideas floating around suggest that there is widespread discontent and confusion intermixed with a good dose of myth and superstition regarding the origin, nature and role of money in society.

Rather than hastening to contribute one more solution to the mountain that has been proposed, we may do well to first inquire into the fundamental principles on which money is based and the process by which it has evolved with the development of society. This may help us identify the precise points at which the global monetary system has become vitiated and ensure that any changes we propose are in line with humanity's evolutionary advance.

1. What is Money?

Money, according to economists, is a medium of exchange, store of value, unit of account. To which other social sciences might add, it is a source of status and social prestige, a provider of physical and psychological security, a contributing factor to human welfare and

well-being, a basis for military strength, a source of public influence and political power. But these terms merely describe its major functions without really explaining what money is.

Money is an evolving symbol of economic value and social power. Over the past two thousand years, it has undergone numerous changes in form, content and the source of the value it seeks to represent. In early times, money took the form of objects of intrinsic value such as cows, tobacco, furs, grain, and various metals. It later took the form of intrinsically or ornamentally valuable objects such as precious metals, which acquired symbolic value as a representative for many other objects. It was also standardized in the form of coins minted from precious metals, whose value was linked to their metallic content.

The introduction of purely symbolic money as a substitute for material objects marked an important stage in social development. Symbolic money was created based on trust in an issuing institution, such as the receipts issued for grain on deposit in the Pharaoh's warehouses or gold on deposit with London goldsmiths, and the myriad bank notes issued by literally thousands of American banks during the 19th century.

Originally intended to reflect existing material assets, money also gradually evolved to represent future intention and purchasing capacity. Promissory notes indicating an intention to pay in future became a powerful stimulus to trade in Renaissance Italy. Wooden tallies issued by the British treasury became prevalent around the same time to represent the Treasury's future tax receipts. The government bonds so prevalent today constituted an essential foundation for the rise of modern nation-states. Ultimately, this led to the issuance of purely fiat currencies, backed only partially by precious metals and anticipated tax revenues. The real backing for national currencies is trust in national institutions of governance supported by the physical assets and productive capacities of the nation issuing them.

The progressive etherealization of money has given rise to endless suspicions, cries of outrage and conspiracy theories, under the assumption that money is, in essence, a physical thing (like the cows and gold nuggets) which has been corrupted and perverted by evil minds. But the etherealization of money has also taken place during the most remarkable period of development in human history and has been associated with a seven-fold rise in real global per capita GDP, so we are advised to seek to fully understand its contribution to human development before condemning and rejecting it wholesale. Closer analysis will show that the growing power of money has always arisen from its symbolic value. Still we are describing only types of money without yet inquiring into what money truly is. We can better understand the power of money by conceiving of it as a purely human creation.

2. Language as a Social Organization

Throughout history, human beings have striven to develop capacities to enhance their power of individual and collective accomplishment. Some capacities are primarily powers of the individual, such as skill in running, climbing, shooting, fire making, cooking. Other powers, such as language, family and government, can only develop and be expressed in relationship with other people. Money is one of the primary collective powers developed by humanity for social accomplishment. Like language, money is an instrument to promote productive, cooperative human social relationships.

Money is one of the greatest inventions of all time. Like language, money is not a thing in itself but rather a social organization designed to promote and facilitate interaction and interchange between human beings over space and time. Language consists of symbolic sounds and images in the form of words, but those words are meaningless objects until assigned a standardized value by members of the community, so they are commonly accepted to represent the same thing to different people. Language is an arrangement and organization of sounds, signs, letters, figures and words in a sequence according to rules of grammar and diction, standardized forms and established conventions, which facilitate communication of ideas, intentions, feelings, sensations and physical facts.

Language has made possible the evolution of Homo sapiens from merely gregarious social animals through civilization and culture into creative, inventive, thinking, learning human beings governed by values, ideals, ideas, prevailing beliefs, customs, laws and a huge body of facts and knowledge derived from past experience. Language is the foundation and medium for interpersonal relationships, family, community, civilization, culture and all higher human attainments. Language makes possible the preservation of past experience, discovery and accumulated knowledge on which civilization is based; the sharing of experiences, ideas and feelings over vast intervals of time and distances in space; the communication of our deeper emotions on which intimate human relationships are founded; and the formulation of dreams, aspirations and ideals which direct our energies for future progress.

The social organization we refer to as language has endowed humanity with a power for individual and collective accomplishment unimaginable for other species. Language generates power and is a form of power – power for communication, knowledge, relationship, production and exchange, war and negotiated peace, governance, education, scientific and technological development, intellectual inquiry and artistic creativity, recreation and entertainment, romance, religious worship and spiritual enlightenment.

3. Money as Social Organization

Money is also a social organization based on generally accepted symbols, set rules, standardized forms and established conventions. Money too depends on acceptance of common standards for form, unit, value and recording. It is a social organization which includes institutions related to minting, issuing, banking, transmission, accounting, taxation, etc. Though originally assuming the form of objects of intrinsic value, the time is long past since the institution of money evolved more symbolic forms which were easier to transport, store and innovatively adapt to represent non-material forms of value.

As language promotes exchange of ideas, information and intentions, money facilitates the exchange between human beings of goods, services and other things of perceived value. Exchange is the social and economic basis for the evolution of society. Without exchange, each human being must rely solely on his own energies to produce all that he desires or on his capacity to take by force that which is possessed by others. Exchange replaces physical violence and war. It makes possible division of labor, specialization and conversion of one type of good or service into any other type. Exchange is possible without money, just as communication is possible without spoken or written language, but in both cases, they are severely constrained in utility, scope, space, time and effective power without the aid of higher symbolic forms.

The evolution from barter exchange to monetary exchange has resulted in enormous social progress – from isolated rural communities into regions organized around urban centers, city states and eventually kingdoms, nation-states and the emerging global community. The evolution of money has facilitated the growth and development of production, commerce, armies, governments, education, science, technology, urbanization and all forms of art.

4. Evolution of Social Power

When human beings exist at subsistence level, money has little utility, since each person produces just sufficient for self-consumption. At the time of Adam Smith only about 15-20% of production passed through monetarized exchange. Initially, money represented the added value of a commodity when a producer employed his surplus production for trade rather than for self-consumption. As production and trade expanded, money came to represent the power of the society for production and exchange of a wide range of products and services. As society became more complex and integrated, money came to represent the conversion value of one form of social power (productive, political, educational, social, transport, communication, entertainment) into another form. Thus, it evolved into a generalized symbol for all forms of social power and a medium for transfers from one form to another. Production, trade, money, banking, finance, governance, transport, communication, education all form elements of the integrated social organization which is the source of all wealth and power. As recent experience illustrates, the attempt to separate economy or banking from governance shows just how interdependent economy and politics have become. The political power of money in modern democracy is their relationship and interconvertibility.

Society has become a seamlessly integrated whole. All forms of social power contribute to the collective capacity of society to accomplish that underlies the value of money. In the measure that an ordinary bag of grain can now be converted into more education, medical care, entertainment, travel, etc., it has acquired far greater value than the original bag of grain produced by the subsistence farmer in the distant past. Money is a means for multiplying the value of every human attribute and capacity.

5. Internet

A comparison of money and the Internet may more clearly place money in its evolutionary context. The Internet is the first truly global social organization functioning ubiquitously in space and instantaneously in time. It capitalizes on the powers created by all previous organizations, most especially the communication power of language and exchange power of money, to generate an unlimited power for collective social accomplishment. As an instrument for personal and social communication, it dwarves the power of all the mechanisms previously devised through history from the newspaper to the telephone and television. As an instrument for education, it makes conceivable the delivery of the highest level and quality of education to all human beings in the near future. As an instrument for governance, it makes feasible, if not yet actual, the participation of all citizens in the process of law making. Humanity, which was just a few millennia ago dependent on the beat of the drum for conveying messages quickly through space and rock paintings to record events for posterity, now depends on the Internet, which provides it with the capacity to communicate, exchange and unite as a single social body globally.

6. Sources of Social Power

The extraordinary and unique social power of money arises from multiple sources:

Exchange: Money facilitates exchange, so valueless surplus acquires value. (An isolated French village around 1900 fed its surplus grape production to the pigs since it had no way to exchange grapes for other things of value. A year after a road and bridge connected the village to the nearest town, it began exporting wine. Like roads, money facilitates exchange).

Efficiency: The advantages of money over barter, which requires the double coincidence between buyer and seller, are well documented. As the introduction of Hindu/Arab numerals and double entry book-keeping vastly facilitated the growth of commerce in Italy during the late Middle Ages (imagine trying to multiply and divide with Roman numerals! or to calculate profit from a cash ledger), money vastly facilitated exchange in terms of the variety of products, number of transactions, extended over space and time.

Energy: Money is a catalyst for transactions. Exchange energizes people to take greater effort. It provides an incentive for producers to produce more than they can consume and to also produce things of which they have no need, but, which have value to others.

Trust: By promoting exchange, money fosters cooperative human relationships for mutual benefit, even among those who do not know each other personally. It promotes trust in others. Each successful transaction increases confidence between buyer and seller and augments the propensity for further transactions. Thus, money encourages the extension of trust which is essential for cooperation and expanding human relationships. Initially, trust is personal in someone we know. Personal trust in known individuals is extended to strangers through the medium of money. At a subsequent stage, trust in individuals and transactions grows into trust in the system for exchange and the institutions that facilitate that exchange (middlemen, processors, distributors, warehouses, retailers, financiers, and customers). Human and institutional relationships expand. Society grows more sophisticated and complex. The individual participates in a widening social network and progressively universalizes his capabilities, similar to the way internet expands the reach of each individual human being.

Inter-convertibility: As already discussed, money fosters the formation of complex, integrated societies by facilitating the exchange of one form of social power into other forms. The power to produce crops can ensure protection from famine. The power of a strong military can defend against invasion. Good roads facilitate transportation. Schools and scholars promote advancement of education and knowledge. Political institutions promote effective governance. Each can develop independently, to a certain extent. But in order for society to emerge as a cohesive unit, they need to be integrated. Money makes possible that integration by facilitating inter-convertibility of one form of social power into all other forms.

Society: Ultimately, money comes to represent the overall power of society to achieve its varied goals in all spheres of life. Without money, modern society is inconceivable. Without society, money has no value.

“Money fosters the formation of complex, integrated societies by facilitating the exchange of one form of social power into other forms.”

7. Myths about Money

“Liberating ourselves from allegiance to outdated attitudes is the essential condition for converting the current crises into evolutionary opportunities.”

Money is subject to a range of myths and superstitions that pose serious obstacles to its further evolution. Our notion of money as a thing gives credence to the superstition that it must necessarily be scarce in the same way land and precious metals are scarce resources. But understanding money as a social organization, we perceive that it is capable of infinite multiplication, the same way information, knowledge, law, education and other social institutions can and do multiply. As humanity now possesses the capacity to produce sufficient food, clothing, housing, education

and medical care to meet the needs of all human beings, it also has the capacity to create sufficient money to ensure effective distribution of those necessities.

The evolution of money is a key to universalizing prosperity through peaceful social evolution. The opening up of commercial relations between China and USA in the 1970s is a dramatic example of the power of money to channel human energies from destructive violence to peaceful cooperation. Today, we live in a world with unprecedented productive capacity. Yet, it is also a world in which precious human, social and productive capacities remain underemployed or unutilized. The problem we face today is not incapacity to meet human needs, but incapacity to fully utilize our productive capacities for the benefit of all humanity. Understanding and attitudes toward money constitute a central part of the problem.

So too, the social status traditionally acquired and still enjoyed by the wealthy also supports the myth that scarcity of money is essential for social welfare, the same way feudal aristocracy believed that limiting status and privilege to a rare few – 10,000 families in 18th century England – was essential for social stability and preservation of culture. The prevailing ideals and values of the 21st century compel us to multiply and distribute the privileges of freedom, equality and social security to all humanity.

The times of scarcity are drawing to an end. Ushering in abundance of freedom, rights, education, wealth and power-sharing will necessitate a breaking of established privileges and entrenched power structures. In the past, this has almost always been accomplished by violent revolution. Today, we have the means to make the transition by peaceful evolution rather than violent revolution. As in the past this process will be driven, not by the permission of the privileged, but by the idealism, aspirations, demands and actions of humanity.

Attacks on the prevailing system of money are an encouraging indication of a growing social awareness and aspiration for a more effective and equitable organization of social power. An impartial, objective inquiry into the social origins, power and evolution of money is the right starting place and essential condition for fashioning a better future for humanity.

The problems the world faces today are because human attitudes have not evolved to keep pace with advances in technology and social institutions. Liberating ourselves from allegiance to outdated attitudes is the essential condition for converting the current crises into evolutionary opportunities.

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On the Need for New Economic Foundations: A Critique on Mainstream Macroeconomics

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Abstract

The body of macroeconomic theory known as the neoclassical-Keynesian synthesis, hereafter mainstream macroeconomics, has dominated the practice of economics since the middle of the twentieth century and is largely unchallenged in institutions that teach economics. Not only does mainstream macroeconomics underlie monetary and fiscal policies intended to promote economic growth, full employment, and price stability, but it also provides the lens through which economic activity is measured and performance is evaluated. Most importantly, it has spawned a generally accepted ideology or conventional wisdom that frames economic issues and 'acceptable' policy responses to them. Woe to the economist or politician who strays beyond the constraints imposed by the beliefs emanating from this body of theory. Mainstream economic theory has always had its critics, but the failure of mainstream economists to predict the collapse of 2008 and the failure of the policy responses to the crisis have stimulated a new round of criticism. This paper surveys a range of criticisms made by economists and non-economists alike and finds that grounds exist for the rejection of mainstream macroeconomic theory. It is mathematically incoherent and irrelevant insofar as the assumptions upon which it is based are not supportable; its concepts are abstract and not measurable, and not capable of addressing the real questions of sustainability, economic stability, power, justice, and equity that affect the human condition. The conclusions reached are: 1) mainstream economic theory took a profoundly wrong path in the mid-twentieth century 2) foundations for a new synthesis of economic thinking are needed capable of addressing the issues that emerged in the late 20th century and integrating findings from other sub-disciplines of economics and other sciences.

1. Introduction

John Ralston Saul, a social critic who has freed himself from the chains of political correctness, in his 1995 Massey lecture, "The Unconscious Civilization," assessed economics in the following terms:

"Economics, as a prescriptive science is actually a minor area of speculative investigation. Econometrics, the statistical, narrow, unthinking, lower form of

*economics is passive tinkering, less reliable and less useful than car mechanics. . . . economics has been spectacularly unsuccessful in its attempts to apply its models and its theories to the reality of our civilization. It's not that the economists' advice hasn't been taken. It has, in great detail, with great reverence. And in general, it has failed."*¹

This is a serious condemnation, and Saul is not alone. The list of those who have critiqued various aspects of neo-classical economics begins as early as 1898 when Thorstein Veblen penned "Why is Economics not an Evolutionary Science?" published in *The Quarterly Journal of Economics* which includes such eminent authors such as Oskar Morgenstern², Nicolas Georgescu-Roegan³, Fred Hirsh⁴, Kenneth Boulding⁵, Wassily Leontief^{6, 7}, Herman Daly^{8, 9}, Robert Nadeau^{10, 11}, Charles Hall¹², Eric Beinhocker¹³, Steve Keen¹⁴, Giovanni Dosi¹⁵, John Kay¹⁶, Daniel Kahneman¹⁷ and David Graeber¹⁸, to name a few.

Is the condemnation warranted? If it is, can mainstream economics be adjusted or is it time to devote effort to the task of formulating a new set of principles that should underlie a new synthesis in economics? These are the questions addressed in the following essay.

2. Elements of Mainstream Macroeconomic Theory

Mainstream macroeconomic theory frames economics as a global optimization problem that can be stated in the following terms: maximize the value of production subject to the availability of the factors of production, labour and capital. Production is the value added by labour and capital to freely available natural resources. Mainstream economics is, in essence, a theory of value.

Mainstream macroeconomic theory is a structure of deductive reasoning based on two first order behavioural axioms: consumers act rationally to maximize their individual utility, and; producers are price takers who adjust output levels to maximize profits. Two second order restrictions on these behaviours are assumed to be true: Individual consumer utility functions are separable and hence additive, and; individual producer cost curves are U-shaped, thereby giving rise to increasing marginal costs (decreasing returns to scale).

Under these conditions, according to generally accepted macroeconomic theory, utility or value added is at its maximum when prices are set at the point where marginal costs equal marginal revenues at the intersection of downward sloping demand curves and upward sloping supply curves. At this point of competitive general equilibrium, profits for all producers are zero. It follows from this theory that market prices are objective and universal measures of value that can be used as weights for aggregation. Macroeconomics can then be legitimately specified in terms of relationships among a small number of aggregate variables such as gross domestic product, consumption, investment, savings, exports, imports.

If it is further assumed that labour and capital are immobile, international trade between nations is mutually beneficial. This is known as the law of comparative advantage.

3. The Conventional Wisdom

Mainstream economics has spawned and rationalized the ideology of free-market capita-

lism. Tenets of the conventional wisdom that emerge from and are rationalized by mainstream economics can be summarized as follows:

- The economy is a self-regulating system set in motion by the ‘invisible hand’ identified by Adam Smith in his *The Wealth of Nations*. Barring market imperfections, the factors of production, labour and capital will be optimally utilized in the creation of value.
- The main objective of economic policy is to ensure sufficient economic growth to achieve ‘full’ employment and price stability.
- Externalities, such as pollution and global warming, are the result of market failures and these are best addressed by economic instruments such as special taxes or cap and trade systems that internalize external costs rather than by bureaucratic regulatory intervention.
- Concentrations of market power or monopolistic practices are market failures that can be addressed by competition policy.
- Profit maximizing behaviour by private enterprise that creates shareholder value is socially beneficial.
- Producers and consumers alike should be free to pursue private interests.
- Speculation and hedging are stabilizing activities and are of social value.
- Market prices, once corrected for imperfections, are objective indicators of value and lead to an optimal allocation of resources.
- Cost-benefit analyses using market prices for summing and comparing costs and benefits and a discount rate for establishing the present value of future costs and benefits are appropriate for establishing public policy.
- Private enterprise and private ownership are to be preferred over government and state ownership in the provision of goods and services.
- Market determined wage rates reflect workers’ productivity and generate an appropriate distribution of income.
- Globalization involving free trade among nations is mutually beneficial.
- The performance of the economy can be adequately monitored by measuring the rate of change of a few macro economic variables: total production indicated by GDP, the rate of unemployment, inflation, the rate of savings and investment, consumption, exports and imports, the foreign exchange rate, and productivity indicated by output per employee or total factor productivity.

4. What’s Wrong with Mainstream Macroeconomic Theory?

A first basis for rejecting a theory would be to show that the theory is irrelevant either because the wrong problem is being addressed, wrong in the sense that it is not one that is empirically given or because the theory is cast in terms of concepts that cannot be observed with the consequence that the theory cannot be empirically rejected.

A second basis for rejection would be to show that inappropriate, inadequate, or oversimplifying assumptions have been made. Arguments of the second kind are often identical with the first kind.

A third basis would be to show that, even if the assumptions are granted, the asserted conclusions do not follow. This basis for rejection is unequivocal.

From the arguments below, mainstream macroeconomic theory and the conclusions derived may be rejected on the grounds of all three bases.

5. Relevance for Current Economic Issues

It has been asserted that the first criterion for the rejection of mainstream macroeconomic theory would be the identification of generally agreed upon important issues that cannot be addressed by the theory. The existence of such issues goes to the relevance of the theory. This is not to say that there aren't sub-disciplines or specializations in the field of economics that do address these issues, but they do so from within a narrow context either by adding concepts to mainstream macroeconomics or without reference to it. It is often the case that add-ons contradict the basic assumptions of macroeconomic theory. There are several such issues.

- *Biophysical constraints*: Global warming, caused in part by the limited capacity of sinks to absorb carbon dioxide emissions, 'peak oil' reflecting the finite endowment of conventional oil, the collapse of fisheries, the deterioration of soils, the pollution of air and water are all important examples of biophysical constraints. Mainstream macroeconomics is unable to address the issue of biophysical constraints because the implicit assumption of freely available sources and sinks for material and energy is in conflict with the existence of biophysical constraints. Further, macroeconomic variables are aggregates expressed in value units whereas biophysical constraints are naturally expressed in physical units and have physical properties specific to each source or sink.
- *Conflict between the goals of 'economic growth' and 'sustainability'*: Ever since the publication of the Brundtland report in 1987, the objective of sustainable development and the concept of sustainability have been widely embraced.¹⁹ Economic growth in mainstream macroeconomics is constrained only by the sources of value, namely labour and capital, whereas sustainability is concerned with long-term pathways that lie within biophysical constraints and the limits imposed by our understanding. The inability of mainstream macroeconomics to incorporate biophysical constraints, as noted above, and its emphasis on short-term prediction make the theory inappropriate for sustainability analysis.
- *Financial Shocks*: It is widely accepted that macroeconomists failed to predict the financial collapse of 2008 or even the possibility that such a collapse could occur. Worse still, it is becoming clear that prescriptions of macroeconomists have failed to return the economic system to levels of performance achieved before the shock. Nor is it clear that the economic system hasn't undergone a sufficient change in structure that such a return is even possible. At a minimum, an economic theory capable of addressing financial shocks must include asset valuation and debt; both are balance sheet items

or stocks. As mainstream macroeconomics is confined to flows in the real economy, it is not surprising that those who focus on macroeconomic variables would not see signs of an impending crisis. Further, as pointed out by George Soros in his theory of reflexivity²⁰, bubbles and their collapse involve disequilibrium and the dynamics of the responses to shocks, all of which are well outside the general equilibrium, comparative static orientation of conventional macroeconomic theory.

- *Income Distribution*: That the distribution of income is becoming more skewed and that such skewed distributions are the major cause for concern are well documented.²¹ Mainstream macroeconomic theory holds that the distribution of income that results in free-market capitalism is optimal with the consequence that there is no need to monitor it. However, as we have seen, the basis for that conclusion is flawed.
- *Performance indicators*: Mainstream macroeconomics offers only a single variable to indicate economic performance, namely total value added or the familiar Gross Domestic Product (GDP). Much has been written on the inadequacy of GDP as a performance indicator, the most prestigious of which is the recent report by the Commission on the Measurement of Economic Performance and Social Progress appointed by President Sarkozy.²²

6. Global Optimization

It is the property of an optimization problem that extrema exist and can be reached only if all the control variables upon which the maximum depends are under the control of a single individual or agent.²³ Since economies consist of many agents and each transaction involves at least two agents, it is clear that, in general, agents do not have complete control over their activities. Therefore, it is inappropriate to cast economic theory as an optimizing problem. From this argument, game theory, insofar as it places decision making in the framework of games of strategy and takes into consideration the conflicting interests of participants, would appear to be a more apt description of the meta-problem.²⁴

“There is growing evidence to refute the axiom that human behaviour can be characterized as the pursuit of self-interest.”

7. The Complexity of Human Behaviour

There is growing evidence to refute the axiom that human behaviour can be characterized as the pursuit of self-interest. For example, “. . . discoveries in evolutionary biology, neurocognitive science, and child development reveal that people are biologically predisposed to be empathetic – that our core nature is not rational, detached, acquisitive, aggressive, and narcissistic, but rather, affectionate, highly social, cooperative and interdependent.”²⁵ The size and nature of the groups within which empathetic or cooperative behaviour is operative or dominant have perhaps evolved over time from the family to the tribe, then to the settlement, the city-state, the nation and increasingly to all people. That humans seek to maximize utility has been questioned by Herbert Simon who proposes that satisficing behaviour or ‘good-enough’ decision making is apt to be more prevalent.²⁶ Daniel Kahneman has accumulated a body of

evidence from which he concludes that humans are genetically programmed for fast thinking or intuitive behaviour, rather than rational behaviour that requires an investment of effort.²⁷ Using case study data, Elinor Ostrom has shown that effective management of common-pool resources, such as a fishery, requires co-operative behaviour and that examples of effective management can be found.²⁸ The evidence suggests that human behaviour is too diverse and complex to be represented as an aggregate consumer agent.

8. Externalities, Common-Pool Resources, and Positional Goods

The second order condition that individual utility functions are separable does not correspond to a reality in which externalities, common-pool resources and positional goods are important. An externality is a cost or benefit that accrues to a third party or parties not involved in a transaction between two parties. The transaction price agreed upon by the two parties to the transaction does not then reflect the true social costs/benefits associated with the transaction and results in more or less than optimal production in competitive markets. Releasing pollutants into air and water, and emitting carbon dioxide into the atmosphere are examples of important externalities. In the real world, external costs may well be as important as the costs internalized in product prices. When externalities are present, it is clear that the utility of the party receiving the external (dis)benefit depends on the actions of others. Positional goods, those whose value is derived at least in part on exclusivity, have the same consequence insofar as the utility of the owner of the positional good depends upon those not having access to it.²⁹ Extraction by an agent from a common-pool resource with the property of subtractability, such as a fishery, reduces access by other agents. Externalities, common-pool resources and positional goods are all instances where individual utility functions are interdependent. The consequences are utility functions are not additive and global optimization is not possible.

9. Increasing Returns to Scale and Market Power

There is little or no empirical evidence in support of the second order condition that the cost curves of individual producers are U-shaped. Steve Keen argues that constant or decreasing marginal costs are a more realistic condition.³⁰ Indeed, the domination of many markets by a small number of powerful corporations suggests decreasing marginal costs which may well be the rule. Brian Arthur cites examples of industries with decreasing costs and argues that decreasing costs are increasingly important in his paper entitled “Increasing Returns and Path Dependence in the Economy”.³¹ This implies that corporations are not price takers; rather, they set prices as a mark-up over cost. The size of the mark-up is what the market will bear and is a reflection of market power.

10. Factors of Production

Mainstream macroeconomic theory rests on the assertion that labour and capital, as sources of value, are the factors of production. Sometimes land is included as a third factor, but the value of land derives only from the labour and capital expended in improvements. Production is then the value added to freely available natural resources by labour and capital. Kenneth Boulding has written that progress in economics will be impeded as long as labour

and capital are considered to be the foundational elements in production, just as, he points out, progress in Chemistry was impeded as long as fire, water, air and earth were considered to be foundational elements, and that it was not until atoms were considered to be foundational that great progress was made in Chemistry. Boulding suggested that the foundational elements for production should be materials, energy, and know-how. Control might be added as a fourth factor. Production in this framing of economics consists of the transformation of materials using energy and know-how subject to on-going control.^{32, 33} Note that labour is at once a source of energy, know-how and control: capital is at once saved labour; it embodies know-how and control and enables the use of energy from non-human sources. It follows that the concepts of 'labour' and 'capital' confound those suggested by Boulding. Further, if the concept of energy is not explicitly recognized in macroeconomic theory, coherence with the laws of thermodynamics cannot be assured.

11. General Equilibrium and Time Structure

Mainstream macroeconomic theory is concerned with economic systems in equilibrium. Just as a mechanical system is in equilibrium when the sum of the forces acting upon it is zero, an economic system is said to be in a state of equilibrium when economic forces of demand and supply are balanced. Equilibrium in a single market is achieved when the quantity of a good sought by buyers is equal to the quantity produced by sellers. General equilibrium is achieved when the markets for all goods and services are in equilibrium. Macroeconomic theory is then a structure for comparing the equilibrium states of an economy before and after the application of an external force taking into consideration that a force directly affecting a single market will impact all markets. The theory is not concerned with processes by which the change is propagated throughout the system nor the time paths of the variables between equilibrium states. There are a number of problems with the comparative statics – general equilibrium approach for representing economic systems. The use of Newtonian mechanics as a model for economic theory is inappropriate. There is no reason to believe that the behaviour of economic agents is subject to inviolable laws as is the case with mechanical systems; the 'forces' of supply and demand are abstract, unitless and in no way analogous to the forces acting upon a physical object. The economic system depicted by neo-classical theory does not encompass the most important characteristics of the Earth system in which human activity plays an important role. The Earth system is far from (thermodynamic) equilibrium; Earth system processes, subject to the laws of thermodynamics, transform low entropy energy from the Sun into high entropy energy radiated from the Earth's surface into space. Work that is useful for human purposes can be accomplished by tapping into the movement of energy through Earth's systems or by reconfiguring those systems. Should thermodynamic equilibrium be reached, all matter would end up in a uniform mix of everything, water would collect in the world's oceans and all biomass would be burnt to ashes; the planet would be without life.^{34, 35, 36} The time dynamics of the Earth processes are critical; if all such processes were instantaneous, thermodynamic equilibrium would be reached and life would not be possible. Gregory Bateson concluded that "Interactions among component processes take the form of causal chains that may be complex. The representation of time structure is essential. When sequences of cause and effect become circular, then the mapping of those sequences onto timeless logic becomes self-contradictory or paradoxical."³⁷ Perhaps this explains why the mathematics of mainstream economics is so convoluted that few can

understand it. Kenneth Boulding wrote that “Equilibrium has become a kind of holy sacrament in economics and has seriously diverted attention from the real world of Heraclitean flux . . . The economic system is a structure in space-time. Consequently, it is evolutionary, subject to constant and irreversible change.”³⁸ Macroeconomic theory, focusing exclusively on equilibrium states and comparative statics, risks irrelevance insofar as it neglects far-from-equilibrium processes essential in the course of evolution.

12. Stocks and Flows

Mainstream macroeconomic theory is specified almost exclusively in terms of relationships between flow variables. Kenneth Boulding observed that “Another taxonomic and conceptual problem that has plagued economics from the time of Adam Smith is the confusion between stocks and flows . . . The capital stock is a population of items, production is births into that population, consumption is deaths . . . Furthermore, the idea that production is consumption is only partly true. What we get satisfaction from, for the most part, is use, not consumption . . . This has led to an extraordinary neglect of information collection about the capital structure . . . and the absurd view that it is income which is the only measure of riches.”³⁹ If well-being depends at least in part on the existence of stocks, it is a small wonder that GDP, a flow variable, is a poor indicator of well-being.

13. Mobility of Capital and Comparative Advantage

The law of comparative advantage that provides the rationale for ‘free trade’ rests on the assumption that the factors of production, labour and capital are immobile. Herman Daly has written that “Without that assumption, (Ricardo’s very restrictive assumption that capital is immobile between nations), the principle of comparative advantage collapses and the rationale for globalization along with it.”^{40, 41} What is left is the absolute advantage enjoyed by powerful nations by way of military prowess, endowments of valuable natural resources such as oil, protected intellectual property, social order, and investments in a highly trained workforce and public infrastructure.

14. Scientific Method

Unlike physical sciences, macroeconomics is not based on a methodology that allows it to reject hypotheses. Scientific hypotheses must be stated in terms of concepts that can be observed and measured if hypotheses are to be falsifiable. Economic concepts, such as utility, markets, and supply and demand curves, are appealing abstractions, but they are neither observable nor measurable. For example, the hypothesis that demand curves are downward sloping cannot be falsified as demand curves cannot be observed. In his book, *Technopoly*, Neil Postman,⁴² the well-known critic of modern culture, observes that “The status of social science methods is further reduced by the fact that there are almost no experiments that will reveal a social science theory to be false.”

15. Measurement and Quantification

The system of national accounts, that is the standard for national and international stati-

tical programs, serves to measure aggregate macroeconomic variables such as production, consumption, investment, price inflation, labour income and employment needed for the quantification of the relationships among them. It is perhaps worth noting that macroeconomics is perhaps the only science whose practitioners are so far removed from the processes of measurement; in many sciences theories about the real world are accompanied by theories of measurement. Oskar Morgenstern, in his assessment of the accuracy of national income statistics⁴³, concludes that the measurement processes used by statistical offices in the compilation of national income statistics are subject to such wide margins of error that the use of statistical techniques to make inferences about the parameters of the relationships is problematic.⁴⁴ It is also to be noted that, in spite of the fact that the dominant economic system is called capitalism, there are few measurements of stocks of capital, if any.

16. Mathematical Incoherence

Even if the behavioural axioms for consumers and producers are accepted along with the second-order restrictions, macroeconomic theory is mathematically incoherent. It can be shown that the addition of downward sloping demand curves for individual consumers to form market demand curves does not necessarily result in downward sloping market demand curves. It can also be shown that supply curves for producers cannot be added together to form market supply curves. These arguments were made by Oskar Morgenstern in his “Thirteen Critical Points in Contemporary Economic Theory: An Interpretation”.⁴⁵ The proofs for these statements are presented by economist and mathematician Steve Keen in the recently published book entitled *Debunking Economics*.⁴⁶ Interestingly, Keen found that the aggregation problems for demand curves and the non-existence of a supply curve had been discovered and published in economic literature by William Gorman in 1953 and George Stigler in 1957. These results had been ignored or glossed over even by Gorman himself and in economics textbooks from Samuelson to Mankiw, with the consequence that most economists are not aware of them.^{47, 48}

Any one of the preceding arguments provides sufficient grounds for the rejection of mainstream macroeconomic theory. Taking into consideration the irrelevance of the theory for addressing major challenges, the weakness of the axioms and assumptions upon which the deductive reasoning is based, and the mathematical incoherence of the reasoning, the case in support of Saul’s indictment is indeed strong. It is particularly devastating that economic theory which relies almost exclusively on deductive reasoning for its validity is found to be mathematically incoherent. John Kay, in his essay “The Map is not the Territory” discusses the dependency of macroeconomics on deductive reasoning.⁴⁹

17. Concluding Observations

The mainstream economics upon which the conventional wisdom that shapes economic policy is based is fatally flawed. I think that Dosi is correct in his assessment that economics took a wrong turn in the middle of the twentieth century. Until that time, economics was more pluralistic, encompassing perspectives from several schools of thought. Perhaps it was the mathematical formalism introduced by Paul Samuelson in his *Foundations of Economic Analysis* that served to propel the neo-classical synthesis to its position of dominance.

“*There is an urgent need to enunciate the foundations upon which a new economic synthesis can be based.*”

Many of the prescriptions that emanate from conventional wisdom must be questioned if not abandoned. For example, if labour is not a binding constraint on production, stimulating economic growth as a means for achieving full employment may be inappropriate. It is likely the case that sources of energy and materials and sinks for wastes, notably carbon dioxide,

are increasingly important as binding constraints. Even so, as energy and the engines that use energy to produce useful work continue to displace labour as a source of work, increasing output does not lead to proportional increases in employment. Conventionally, income from employment and savings from employment income are the means by which people have access to the goods and services they require over their lifespan. Able-bodied people unable to find employment are stigmatized as a burden on society and are denied access to all but the most basic of goods and services. The challenge will be to find means other than employment for providing fair or equitable access to needed goods and services. Second, it is clear that cost-benefit analyses of social programs using market prices for weighing costs and benefits and a discount rate for calculating present values are inappropriate insofar as market prices cannot be considered an objective measure of societal values even in the absence of externalities.

There is an urgent need to enunciate the foundations upon which a new economic synthesis can be based. A starting point may be found in the work of Kenneth Boulding, particularly his book *Ecodynamics: A New Theory of Societal Evolution* published in 1978.⁵⁰ Boulding proposes an evolutionary approach to economics. The distinguishing feature of evolutionary systems is its focus on the generation of unpredictable novelty in systems far from thermodynamic equilibrium and the propagation of novelty from generation to generation. In human populations, knowledge is accumulated in the collective mind-space of society and is embodied in artifacts that transform materials and energy to provide the services needed for the sustenance of human life. It follows that economics needs to encompass two kinds of entities: processes that transform materials, energy and information, both naturally occurring and purposeful, and agents, individuals and institutions that create and control biophysical processes directly and indirectly. This emphasis on knowledge generation is echoed in the work of Brian Arthur in his 2009 book entitled *The Nature of Technology: What it is and how it evolves*.⁵¹

Much valuable research has been done in specialized sub-disciplines of economics and other disciplines, including economic history, the history of economic thought, institutional economics, ecological economics, bio-physical economics, behavioral economics, political science, and evolutionary systems. The needed new synthesis should be capable of incorporating many of the findings from these fields of research.

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Notes

1. John Ralston Saul, *The Unconscious Civilization* (Toronto: Anansi Press, 1995).
2. Oskar Morgenstern, "Thirteen Critical Points in Contemporary Economic Theory: An Interpretation," *Journal of Economic Literature* 10, no. 4 (1972): 1163-1189.
3. Nicholas Georgescu-Roegan, *The Entropy Law and the Economic Process* (Cambridge MA: Harvard University Press, 1971).
4. Fred Hirsch, *Social Limits to Growth* (Cambridge, MA: Harvard University Press, 1976).
5. Kenneth Boulding, *Ecodynamics: A New Theory of Societal Evolution* (London: Sage Publications, 1978).
6. Wassily Leontief, Letter to the editor, *Science* 217(1981): 104-107.
7. Wassily Leontief, Faye Duchin and Daniel B. Szyld, "New Approaches in Economic Analysis" *Science* 228, no. 4698 (1985): 419-422.
8. Herman E. Daly and John B. Cobb Jr., *For the Common Good* (Boston MA: Beacon Press, 1989).
9. Herman E. Daly, *Beyond Growth: the Economics of Sustainable Development* (Boston MA: Beacon Press, 1996).
10. Robert L. Nadeau, *The Wealth of Nature: How Mainstream Economics has failed the Environment* (New York: Columbia University Press, 2002).
11. Robert L. Nadeau, *The Environmental Endgame: Mainstream Economics, Ecological Disaster, and Human Survival* (New Brunswick, NJ: Rutgers University Press, 2006).
12. Charles Hall and Kent Klitgaard, "The Need for a New, Biophysical-Based Paradigm in Economics for the Second Half of the Age of Oil," *International Journal of Transdisciplinary Research* 1, no. 1 (2006): 4-22.
13. Eric J Beinhocker, *The Origin of Wealth: the radical remaking of economics and what it means for business and society* (Boston: Harvard Business School Press, 2006).
14. Steve Keen, *Debunking Economics: The Naked Emperor Dethroned* (New York: Zed Books, 2011).
15. Giovanni Dosi, "Economic Coordination and Dynamics. Some Elements of an Evolutionary Paradigm," *Institute for New Economic Thinking Working Paper* 2011.
16. John Kay, "The Map is not the Territory: An Essay on the State of Economics," *Institute for New Economic Thinking* October 4, 2011 <http://ineteconomics.org/blog/inet/john-kay-map-not-territory-essay-state-economics>
17. Daniel Kahneman, *Thinking, Fast and Slow* (Toronto: Doubleday, 2001).
18. David Graeber, *Debt: The First 5,000 Years* (New York: Melville House Publishing, 2011).
19. World Commission on Environment and Development, *Our Common Future* (New York: United Nations, 1987).
20. George Soros, *The New Paradigm for Financial Markets: The Credit Crisis Of 2008 and What it Means* (New York: Public Affairs, 2008).
21. Richard Wilkinson and Kate Pickett, *The Spirit Level: Why Equality is Better for Everyone* (London: Penguin Books, 2009).
22. Joseph E Stiglitz, Amartya Sen and Jean Paul Fitoussi, *Mis-Measuring our Lives: Why GDP doesn't add up* (New York: The New Press, 2011).
23. Morgenstern, "Thirteen Critical Points in Contemporary Economic Theory: An Interpretation," 1163-1189.
24. John Von Neumann and Oskar Morgernstern, *Theory of Games and Economic Behaviour* (Princeton: Princeton University Press, 1953).
25. Jeremy Rifkin, *The Third Industrial Revolution: How lateral power is transforming energy, the economy, and the world* (New York: Palgrave-MacMillan, 2011).
26. Herbert Simon, *The Sciences of the Artificial* (Cambridge: The MIT Press, 1982).
27. Kahneman, *Thinking, Fast and Slow*.
28. Elinor Ostrum, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge: Cambridge University Press, 1990).
29. Hirsch, *Social Limits to Growth*.
30. Keen, *Debunking Economics*.
31. W. Brian Arthur, *Increasing Returns and Path Dependence in the Economy* (Ann Arbor, Michigan: University of Michigan Press, 1994).
32. James R Beniger, *The Control Revolution: Technological and Economic Origins of the Information Society* (Cambridge: Harvard University Press, 1986).
33. Boulding, *Ecodynamics: A New Theory of Societal Evolution*.
34. Georgescu-Roegan, *The Entropy Law and the Economic Process*.
35. Axel Kleidon, "A basic introduction to the thermodynamics of Earth system far from equilibrium and maximum entropy production," *Philosophical Transactions of the Royal Society Biological Sciences* (2010): 1303-1315.
36. Nigel Goldenfeld and Carl Woese, "Life is Physics: evolution as a collective phenomenon far from equilibrium," *Annual Review of Condensed Matter* 2 (2011):375-399.

37. Gregory Bateson, *Mind and Nature: A Necessary Unity* (New York: Bantam Books, 1972).
38. Boulding, *Ecodynamics: A New Theory of Societal Evolution*.
39. Boulding, *Ecodynamics: A New Theory of Societal Evolution*.
40. Daly and Cobb Jr., *For the Common Good* (Boston: Beacon Press, 1989).
41. Daly, *Beyond Growth: the Economics of Sustainable Development* (Boston: Beacon Press, 1996).
42. Neil Postman, *Technopoly* (New York: Knopf, 1992).
43. Oskar Morgenstern, *On the Accuracy of Economic Observations* (Princeton: Princeton University Press, 1960).
44. Leontief, Duchin and Szyld, "New Approaches in Economic Analysis," 419-422.
45. Morgenstern, "Thirteen Critical Points in Contemporary Economic Theory: An Interpretation," 1163-1189
46. Keen, *Debunking Economics*.
47. Paul A Samuelson, *Foundations of Economic Analysis* (Cambridge: Harvard University Press, 1947).
48. Gregory Mankiw, *Principles of Economics* (Fort Worth: Dryden Press, 1998).
49. Kay, "The Map is not the Territory."
50. Boulding, *Ecodynamics: A New Theory of Societal Evolution*.
51. W. Brian Arthur, *The Nature of Technology: What it is and how it evolves* (New York: Free Press, 2009).

Bibliography

1. Arthur, W. Brian. (1996) "Increasing Returns and the New World of Business," *Harvard Business Review*.
2. Arthur, W. Brian. (2006). *Out-of-Equilibrium Economics and Agent-Based Modeling. Handbook of Computational Economics, Vol. 2: Agent-Based Computational Economics* K. Judd and L. Tesfatsion, eds, Amsterdam: Elsevier/North-Holland.
3. Ayres, Robert U. (1978) *Resources, Environment and Economics: Applications of the Materials/Energy Balance Principle* New York: John Wiley and Sons.
4. Ayres, Robert U. (1993) "Materials and the Environment," In M.B. Bever ed. *Concise Encyclopedia of Materials Economics, Policy and Management*. Oxford: Pergamon Press.
5. Berlinski, David. (2000). *The Advent of the Algorithm: The Idea that Rules the World* New York: Harcourt Inc.
6. Cleveland, Cutler J. (2003). "Biophysical Constraints to Economic Growth," In D. Al Gobaisi, Editor-in-Chief. *Encyclopedia of Life Support Systems* Oxford, UK: EOLSS Publishers Co.
7. Hall, C., Lindenberger, D., Kumel, R., Kroeger, T. and Eichner, W. (2001). "The Need to Reintegrate the Natural sciences with Economics," *Bioscience* 51, no. 8.
8. Hardin, Garret (1968). "The Tragedy of the Commons," *Science* 162, no. 3859: 1243-1248.
9. Hoffman, Robert. (2010). "A Cybernetic Approach to Economics. Cybernetics and Human Knowing," *American Society for Cybernetics* 17, no. 4: 89-97.
10. Jackson, Tim. (2009). *Prosperity without Growth: Economics for a Finite Planet* London: Earthscan Publishing.
11. Kinsella, Stephen. (2011). "Words to the Wise: Stock Flow Consistent Modeling of Financial Instability". Paper presented at the conference "Bridging silos, breaking silences: New responses to instability and inequality," *Institute for New Economic Thinking* November 4-6, 2011, Desmond Tutu Center, New York City. Electronic copy available at: <http://ssrn.com/abstract=1955613>
12. Ostrum, Elinor. (2005). *Understanding Institutional Diversity* Princeton NJ: Princeton University Press.
13. Perrings, Charles (1986). "Conservation of Mass and Instability in a Dynamic Environment-Economy System", *Journal of Environmental Economics and Management* 13: 199-211.
14. Postman, Neil (1992). *Technopoly*: New York: Knopf.
15. Samuelson, Paul A. (1951) *Economic: An Introductory Analysis* New York: McGraw-Hill Book Company, Inc.
16. Scott, Bruce R. (2009). *The Concept of Capitalism*. Berlin: Springer-Verlag.
17. Stiglitz, Joseph E. (2010). *Freefall: America, Free Markets, and the Sinking of the World Economy*. New York: W.W. Norton and Company.
18. Turner, G. M., & Poldy, F. (2001). "Let's get physical: Creating a stocks and flows view of the Australian economy." Paper presented at MODSIM 2001 International Conference on Modelling and Simulation. December 10-13, 2001, *Australian National University*, Canberra.
19. Turner, G.M., Hoffman, Robert., McInnis, Bertram., Poldy, Franz & Foran, Barney. (2011). "A tool for strategic biophysical assessment of a national economy: The Australian stocks and flows framework," *Environmental Modelling & Software* 26: 1134 – 1149.
20. Veblen, Thorstein. (1898). "Why is Economics Not an Evolutionary Science?," *The Quarterly Journal of Economics* 12, no.4: 373-397.
21. Victor, Peter (2008). *Managing without Growth: Slower by design not disaster* Cheltenham: Edward Elgar.

New and Appropriate Economics for the 21st Century: A Survey of Critical Books, 1978-2013

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Abstract

Economics is an important construct explaining human wealth and well-being. Many economic ideas of the industrial era, however, are not appropriate to 21st century economies, where human and natural capital are increasingly valued, and simplistic assessments of wealth, national product, growth, and human happiness are increasingly questioned due to bad economic ideas in high places. To cope with growing complexity, uncertainty, and concern for sustainability, many critical books have been published, especially over the past 35 years. This “frontier frame” seeks to outline these views in a compact format of six categories: General Critiques of deficient economic thought, Ecological Economics, Scientific and Global Organizations (such as the OECD and UN), Textbooks Supporting a Broader View, Alternative Labels (such as Heterodox and Post-Keynesian), and a seven-point agenda of needed actions to accelerate learning about better ideas for economic policy. An Appendix briefly describes ten organizations promoting new economics.

The Problem of Outmoded Economics

“Economics” is an important construct, having to do with the production and distribution of wealth, human well-being and welfare. Despite disclaimers, it is inexorably tied to ideology and values—political ideas about the good society and how to promote it. Some economists describe their efforts as “scientific,” but this is merely a strategy to legitimate their work and their assumptions, while excluding other economic thinking that is deemed less “rigorous,” even if broader and more relevant.

“Alternative views of what economics is and ought to be are highly fragmented and seldom debated.”

Economics is often considered as a “social science,” but the discipline does not behave as a science, where competing views are seriously debated, and practitioners are truth-seekers above all, open-minded to new perspectives and paradigms. Curiously, alternative views of what economics is and ought to be are highly fragmented and seldom debated. The purpose of this “frontier frame” is to display the growing litera-

ture of alternatives, so as to encourage more discussion, debate, and integration. A new and appropriate economics construct is certainly one of the “evolutionary ideas that can spur our collective progress” (*Cadmus* Vision Statement) and, arguably, the keystone construct. But how do we decide on what it should be?

The economics of the industrial era and the 20th century is not appropriate to the 21st century service economies, where human capital and natural capital are—and should be—increasingly valued, and estimates of “wealth”, national product, and human happiness and satisfaction are increasingly questioned. On the negative side, the world economy and the world environment have been gravely damaged by bad economic ideas in high places, especially simplistic and idealized “free market” economics that brought on the ruinous Great Recession of recent years, and equally simplistic measures of Gross Domestic Product that omit many fundamental components of wealth, as well as activities such as pollution that diminish wealth.

Outmoded paradigms need to be replaced by an economics appropriate to 21st century conditions of climate change, environmental crises, scarce financial and natural resources, burgeoning technology (for better *and* worse), globalization, large multinational enterprises, an aging-yet-still-expanding population with rising expectations and frustrations, and growing complexity, uncertainty, and concern for sustainability. Transition appears to be slowly underway, yet the dead ideas of “zombie economics” (see Quiggan, below) continue to prevail. This essay seeks to hasten the transition by pointing to the growing flood of critiques, and who wrote what and when.

Titles from the 2009-2012 period have been extracted from my Global Foresight Books website (where one can access longer abstracts), while titles from the 1980-2008 period are selected from *Future Survey*, a monthly publication of the World Future Society, that I founded and edited. They are arranged in six overlapping categories. An Appendix lists organizations supporting new economics, many of them connected with books cited here.

1. General Critiques
2. Ecological Economics
3. Scientific and Global Organizations (NRC, World Bank, OECD, UN)
4. Textbooks Supporting a Broader View
5. Alternative Labels: Heterodox, Post-Keynesian, etc.
6. What Must Really Be Done

APPENDIX : Ten Organizations Promoting New Economics

Items within each category are generally arranged from broad to specific in focus, and recent to not-so-recent. I have seen many of these books, but information on many others is from publisher catalogs. This listing should be seen as provisional, and an invitation to a more thorough treatment of all titles considered here, as well as appropriate titles that have been overlooked. An asterisk (*) indicates titles that appear to be especially important.

1. GENERAL CRITIQUES

It is difficult to identify one “knock-‘em-dead” book that appears to stand out above all

others. Each has some contribution to make. **The Skeptical Economist: Revealing the Ethics Inside Economics** by Jonathan Aldred of Cambridge University (Earthscan, Nov 2010/288p) discusses views about how we ought to live and what we value, and questions the ethical foundations of economics. **Debunking Economics: The Naked Emperor Dethroned** by Steve Keen of University of Western Sydney (Zed Books, revised edition, Sept 2011/544p; www.debunkingeconomics.com) considers the many critiques of neoclassical theory, seen as “a degenerative research program” leading to a belt of hypotheses that shield core beliefs from critics. **The Puzzle of Modern Economics: Science or Ideology** by Roger E. Backhouse of University of Birmingham (Cambridge University Press, Aug 2010/216p) describes how economists have tried to make their subject scientific, and the pace of dissent within the discipline. **Reassessing the Paradigm of Economics: Bringing Positive Economics Back into the Normative Framework** by Valeria Mosini of the London School of Economics (Routledge, July 2011/176p) questions neoliberal doctrine, as well as attempts to create scientific status, and calls for reformulating 21st century economics in an explicitly-recognized normative framework. Also see **The End of Value-Free Economics** edited by Hilary Putnam of Harvard University and Vivian Walsh of Muhlenberg College (Routledge, Nov 2011/240p). **Economics of Good and Evil: The Quest for Economic Meaning from Gilgamesh to Wall Street** by Czech economist Tomáš Sedláček (Oxford University Press, May 2011/384p) questions the touting of economics as a science, and views it merely as a parable to grasp the world around us; ultimately, it is about good and evil.

The Delusions of Economics: The Misguided Certainties of a Hazardous Science by Gilbert Rist of the Graduate Institute of International and Development Studies in Geneva (Zed Books, Nov 2011/224p) examines the biases and quasi-religious beliefs that led to constructing economics as a “science.” **Gross Domestic Problem: The Politics Behind the World’s Most Powerful Number** by Lorenzo Fioramonti of the University of Pretoria (Zed Books, Jan 2013/208p) addresses the global quest to dethrone the GDP measure and changes from below. ***Economics after the Crisis: Objectives and Means** by Adair Turner, Chair of the UK Financial Services Authority (MIT Press, April 2011, 128p) argues that the faults of theory and policy that led to the recent crisis resulted from simplistic beliefs about the objectives and means of economic activity, and assumptions about inequality as inevitable and necessary. ***The Assumptions Economists Make** by Jonathan Schlefer of the Harvard Business School (Harvard University Press, March 2012, 296p) also views economists as largely accountable for the financial crisis and income inequality, due to blind faith in the invisible hand of unregulated enterprise. ***Zombie Economics: How Dead Ideas Still Walk among Us** by John Quiggan of University of Queensland (Princeton University Press, Oct 2010, 216p) lays bare the many assumptions behind market liberalism and dead ideas such as “trickle-down economics,” and asks how we might kill these zombie ideas once and for all. The new paperback edition (Princeton University Press, May 2012, 248p) adds a chapter on the re-emergence of questionable pre-Keynesian ideas about austerity and balanced budgets as a response to the recession.

The Economic Crisis and the Crisis in Economics (Institute for New Economic Thinking, April 2010; see APPENDIX on Organizations, #2) assembles proceedings of the inaugural conference of INET held at King’s College/Cambridge, where Keynes did his thinking in the 1930s. Topics include theory to guide reform and restructuring, a new global

financial architecture, consequences of inequality, and what government can and will do. **The New Economics: A Bigger Picture** by David Boyle and Andrew Simms of the New Economics Foundation in London (Earthscan, Oct 2009, 192p; see APPENDIX #9) points to a world driven by economic assumptions that no longer work, and boosts “new economics” approaches that value real wealth, put people and planet first, and reflect full costs in pricing. Similarly, **The Economics of Enough: How to Run the Economy as if the Future Matters** by Diane Coyle of University of Manchester (Princeton University Press, March 2011/304p) argues that the world’s leading economies face many crises and share “a reckless disregard for the future,” and lays out steps to create a sustainable economy. ***Rapport de la Commission sur la mesure des performances économiques et du progrès social** by Joseph Stiglitz, Amartya Sen, and Jean-Paul Fitoussi (Ministère de l’Economie, Sept 2009/324p) considers quality of life, sustainable development, and the need for new indicators of wealth and progress. **Right Relationship: Building a Whole Earth Economy** by Peter G. Brown of McGill University and Geoffrey Garver of the Quaker Institute for the Future in Montreal (Berrett-Koehler, Feb 2009/216p; foreword by Thomas E. Lovejoy) exposes dangerous assumptions and uses the core Quaker principle of “right relationship” to aid the common good as foundation for a new economic model. **The End of Progress: How Modern Economics Has Failed Us** by Singapore-based economist Graeme P. Maxton (Wiley, 2011/226p) asserts that “our species is moving backwards” as we destroy more than we build, “a major cause of our problems is modern economic thinking,” our financial system is broken, we will become financially poorer and less healthy, and many changes are needed. **Beyond the Financial Crisis: The Oxford Scenarios** by Angela Wilkinson of University of Oxford (Saïd Business School and James Martin 21st Century School, March 2010/81p; www.sbs.oxford.edu/financial-scenarios) describes the recent crisis as caused by “socially constructed ignorance” of standard economics, and offers two scenarios of “Growth” (business as usual) and “Health” (coping with complexity and pursuing sustainability as opportunity). **The Restructuring of Capitalism in Our Time** by Marxist economist William K. Tabb of CUNY-Queens College (Columbia University Press, Jan 2012/352p) questions the shift to financialization and calls for a social structure of accumulation that values economic justice over profit and establishes an inclusive, sustainable growth model.

All of the above-mentioned books have been energized by the Great Recession that began in 2008. But critiques of economic thinking go back several decades. In the post-2000 period, **The Meaning of the 21st Century: A Vital Blueprint for Ensuring Our Future** by James Martin (Riverhead/Penguin, 2006/400p) questions perverse subsidies and the false accounting of the GDP measure that ignores natural capital. **Capitalism as if the World Matters** by Jonathon Porritt of the UK Forum for the Future and the UK Sustainable Development Commission (Earthscan, Dec 2005) attacks the GDP measure and proposes a “Five Capitals Framework” that considers natural capital, human capital, social capital, manufactured capital, and financial capital. In **The Real Wealth of Nations: Creating a Caring Economics** (Berrett-Koehler, 2007/318p), Riane Eisler insists on six elements in any economic model: the market economy, the illegal economy, household production, unpaid community work, government, and the natural economy. Based on Eisler’s thinking, **The State of Society: Measuring Economic Success and Human Well-Being** by Erwin de Leon and Elizabeth T. Boris of the Urban Institute (UI/CIP, May 2010/81p; www.urban.org/publications/412101.html) offers a broad range of measures that go beyond GDP, with 79 indicators

in 14 categories of well-being. **Economics for Humans** by Julie A. Nelson of Tufts University (University of Chicago Press, 2006/154p) questions the biased beliefs of academic economics, which holds mathematical sophistication in high regard while issues of human need and caring are considered “non-rigorous.” **A Guide to What’s Wrong with Economics** edited by Edward Fullbrook of the University of the West of England (Anthem Press, 2004/323p) pillories micro nonsense, macro nonsense, ethical voids, misuse of mathematics, and neoclassical economics as ideology (shedding light on an ever-smaller proportion of economic reality), while advocating ecological economics. Fullbrook went on to edit **Real-World Economics: A Post-Autistic Economics Reader** (Anthem, 2007) and **Pluralist Economics** (Zed Books, 2008), to edit the *Real World Economics Review*, and to found the World Economics Association in 2011 (see APPENDIX #1).

Several outstanding books were published in the 1990s. ***Turning Point: An End to the Growth Paradigm** by futurist Robert U. Ayres of INSEAD (St. Martin’s Press, 1998) expresses “deep misgivings” about economic growth as currently defined and measured, world trade as an instrument to achieve growth, irrational belief in the free market, econometric models as “very sophisticated trend extrapolation machines,” and economic mismanagement due to flaws in theory. ***The Genuine Progress Indicator: Summary of Data and Methodology** by Clifford Cobb, Ted Halstead, and Jonathan Rowe (Redefining Progress, 1995; brief version as *Atlantic Monthly* Cover Feature, Oct 1995, pp59-78) critiques the GDP measure for ignoring contributions of families, communities, and the environment (much of what economists call “growth” is really fixing blunders and social decay from the past), and proposes the GPI as a measure of “honest national accounting” expanding on the Index of Sustainable Economic Welfare proposed by Herman Daly and John B. Cobb Jr. Also see **The Green National Product: A Proposed Index of Sustainable Economic Welfare** by Clifford W. Cobb and John B. Cobb Jr (University Press of America, 1994/285p). **For the Common Good: Redirecting the Economy Toward Community, the Environment, and a Sustainable Future** by Herman Daly of the University of Maryland and John B. Cobb of the Claremont Graduate School (Beacon Press, 2nd edition, March 1994/534p), first published in 1989, critiques the failings of economics and proposes a real-world approach to the economy, including a restoration of honesty to the function of money in the economic system. **The Death of Economics** by Paul Ormerod of *The Economist* (Faber and Faber, 1994; St. Martin’s Press, 1995) views the orthodoxy of conventional economics as “trapped in an idealized, mechanistic view of the world” and questions measuring prosperity by GDP, mechanistic modeling, and competitive general equilibrium. **The End of Economics? Ethics and the Disorder of Progress** by Cristovam Buarque of the University of Brasilia (Zed Books, 1993) calls for ethics in economics, valuing nature and culture, and rethinking progress. **The Misunderstood Economy: What Counts and How to Count It** by Robert Eisner of Northwestern University, a past president of the AEA (Harvard Business School Press, 1994), discusses failures of the GDP measure, the full value of government output, environmental deterioration, intergenerational transfers, and measure of human suffering and well-being. **Steady-State Economics** by Herman E. Daly (Island Press, 2nd edition, 1991), first published in 1977, criticizes the “more is better” growth paradigm, evasion of ethical issues, and the failure to seriously consider “management of the household.” **Real-Life Economics: Understanding Wealth Creation** edited by Paul Ekins of University of London and Manfred Max Neef of the Development Alternatives Center in Santiago (Routledge,

1992/460p) faults mainstream economics for failing to provide a coherent explanation of reality, and proposes a four-capital model of wealth creation and humanistic economics. The 37 essays were sponsored by London's Living Economy Network.

The 1980s also saw a number of critiques. **The Living Economy: A New Economics in the Making** edited by Paul Ekins (Routledge & Kegan Paul, 1986) provides papers from 1984/1985 conferences of The Other Economic Summit on the assumptions of GDP and human-scale economics. Contributors include James Robertson, Herman Daly, Hazel Henderson, Johan Galtung, John McKnight, and Willis Harman. **Future Wealth** by British economist/futurist James Robertson (Cassell, 1989/178p) questions the "primitive assumptions" of conventional economics and proposes principles for a new economic order. Earlier in the decade, ***Dialogue on Wealth and Welfare: An Alternative View of World Capital Formation—a Report to the Club of Rome** by Orio Giarini of the Graduate Institute of European Studies in Geneva (Pergamon, 1980/386p) critiqued the GNP measure for including destructive activity and excluding non-monetarized production, insisting that the natural environment must be recognized in economic terms. A follow-on report to the Club of Rome, **The Limits to Certainty** by Orio Giarini and Walter Stahel (Kluwer Academic, 1993; preface by Ilya Prigogine) enumerates several ways in which the predominance of services alters the fundamental notions of economic value. Both books are summarized in "The Wealth of Nations Revisited" by Orio Giarini, Garry Jacobs, Bernard Lietaer, and Ivo Slaus (*Cadmus*, 1:1, Oct 2010, pp 9-27). Also in the same issue, see "Indicators of Economic Progress: The Power of Measurement and Human Welfare" by Garry Jacobs and Ivo Slaus (pp 53-113), a lengthy summation of alternative economic indices such as ISEW and GPI, and a proposed Human Economic Welfare Index (HEWI).

Also in the 1980s, ***The Moral Dimension: Toward a New Economics** by wide-ranging sociologist Amitai Etzioni of GWU (Free Press, 1988; see APPENDIX #8) criticizes the paradigm of neoclassical economics for overemphasis on free-standing selfish individuals. **Humanistic Economics: The New Challenge** by Mark A. Lutz of the University of Maine and Kenneth Lux (Bootstrap Press/ITDG, 1988; foreword by Amitai Etzioni), an update of **The Challenge of Humanistic Economics** (Benjamin/Cummings, 1979), critiques the one-dimensional "rational man" of mainstream economics and builds on the universality of human needs for basic material needs, meaningful work, and dignity. Of related interest is **Human Economy: A Bibliography** compiled by John Applegath of the long-defunct Human Economy Center in Amherst MA (HEC, 1981/77p), with 50 annotated items and some 950 unannotated items on critiques of economics, wealth distribution, self-sufficiency, ecology/environment, etc.

***Stabilizing an Unstable Economy** by widely-respected economist Hyman P. Minsky of Washington University (Yale University Press, 1986/353p; a Twentieth Century Fund Report) takes a "post-Keynesian view" that the standard body of economic theory is seriously flawed; despite its elegant logical structure, it fails to explain how financial crises emerge. ***Dangerous Currents: The State of Economics** by Lester C. Thurow of MIT (Random House, 1983) cites the intellectual disarray of economists, lack of shared ideas, unsupported assertions, and ever-narrower interpretations as mathematical sophistication increases; transition to another mode of thought is difficult, however, since it involves "abandoning a beautiful sailing ship." **Economics and Policymaking: The Tragic Illusion** by political

scientist Eugene J. Meehan of University of Missouri-St. Louis (Greenwood Press, 1982) notes that economists rarely examine their basic assumptions and their reward system strongly supports the status quo. ***The Politics of the Solar Age: Alternatives to Economics** by the remarkable auto-didact Hazel Henderson (Anchor Press/Doubleday, 1981, 433p) offers a spirited collection of essays aimed at a “complete restructuring of economics” and its statistical illusions; topics include the end of “flat-earth economics,” failures of Keynesianism and post-Keynesians, economists as apologists for late-stage industrial culture, and battles over changing paradigms; it utilizes extensive footnoting and annotations of 46 books on re-doing economic theory. Henderson’s earlier book, **Creating Alternative Futures: The End of Economics** (Berkeley/Windhover, 1978, 403p; foreword by E.F. Schumacher) has essays on economics as “our reigning sophistry,” the vision of a decentralized society, problems with GNP measures ignoring social and environmental costs, and inadequate modeling of “efficiency” criteria. **Managing Growth in the 80’s: Toward a New Economics** by Robert Hamrin (Praeger, 1980), former staff economist of the US Congress Joint Economic Committee, argues for new variables to overhaul old economic models, and a shift to the “economics of quality” and a “total employment economy.”

2. ECOLOGICAL ECONOMICS

A parallel stream of critiques focuses largely if not entirely on the neglect of environmental concerns. Several general overviews deserve mention at the outset. ***The Bridge at the End of the World: Capitalism, the Environment, and Crossing from Crisis to Sustainability** by James Gustave Speth (Yale University Press, March 2008/295p), former head of the World Resources Institute and Dean of the Yale School of Forestry and Environmental Studies, passionately argues that our market economy operates on “wildly wrong market signals” and lacks correcting mechanisms; advocates real growth that promotes well-being of people and nature (as measured by ISEW), and ecological economics not as the end of the world but the beginning of a new one. ***Natural Capitalism: The Next Industrial Revolution** by Paul Hawken, Amory B. Lovins, and L. Hunter Lovins (10th Anniversary Edition, Earthscan, June 2010/416p) criticizes regulatory failures and “free market fantasies” that assume perfect information; advocates radical resource productivity, biomimicry, and saving energy as less costly than buying it. ***State of the World 2008: Innovations for a Sustainable Economy** edited by Gary Gardner and Thomas Prugh of the Worldwatch Institute (W.W. Norton, Jan 2008) calls for reforming economics in seven areas: shifting focus from growth to well-being, making prices tell the ecological truth, accounting for nature’s contribution, applying the precautionary principle, adjusting economic scale, valuing women’s work, and revitalizing commons management. **Prosperity Without Growth: Economics for a Finite Planet** by Tim Jackson of University of Surrey (Earthscan, Dec 2009/264p) updates Jackson’s 2003 **Redefining Prosperity** report to the UK Sustainable Development Commission, proposing “a different kind of macroeconomics” that does not rely on ever-growing consumption and growth, where economic activity remains within ecological scale.

A New Blueprint for a Green Economy by Edward Barbier of the University of Wyoming and Anil Markandya of the Basque Center for Climate Change (Earthscan/Routledge, Sept 2012/192p), updates the original 1989 version, urging progress in three key areas: valuing the environment, accounting for the environment, and incentives for environmental

improvement. **Capitalizing on Nature: Ecosystems as Natural Assets** by Edward Barbier (Cambridge University Press, Oct 2011/336p) addresses key issues in the unfolding “Age of Ecological Scarcity,” the central challenge of environmental economics. **Our Choice: A Plan to Solve the Climate Crisis** by Al Gore (Rodale Press, Nov 2009/416p) synthesizes 30 “Solutions Summits” convened by the former US Vice President, including changing the GDP system of national accounts (never intended as a measure of well-being when created in the 1930s) and the way we think about the true cost of carbon (several trillion dollars of subprime carbon assets depend for their valuation on a zero price for carbon emissions).

Economic Thought and U.S. Climate Change Policy edited by David M. Driesen of the Syracuse University College of Law (MIT Press, June 2010/356p) questions the unyielding neoliberal stance that embraces free markets, the many errors of cost-benefit analysis of climate change, and overestimates of the cost of abating pollution and reducing greenhouse gases. ***The Economics of Climate Change: The Stern Review** by Sir Nicholas Stern (Cambridge University Press, Jan 2007/712p), describes climate change as “the greatest market failure the world has ever seen,” and urges policy to promote strong market signals. **Twenty-First Century Macroeconomics: Responding to the Climate Challenge** edited by Jonathan M. Harris and Neva R. Goodwin of Tufts University (Edward Elgar, June 2009/352p) challenges conventional assumptions about economic growth and urges an economics that accounts for environmental and generational impacts of climate change, and reorienting investment to new economic development paths.

The Economics of Biodiversity: Ecological and Economic Foundations edited by Pushpam Kumar of University of Liverpool (Earthscan, Nov 2010/400p) describes The Economics of Ecosystems and Biodiversity Project (TEEB) set up in 2007 and led by the UN Environmental Programme to globally assess the economic aspects of ecosystem services provided by nature. This resulted in **The Economics of Ecosystems and Biodiversity: TEEB for Local and Regional Policymakers** (UNEP, Jan 2011/208p) and **The Economics of Ecosystems and Biodiversity in National and International Policymaking** (UNEP, June 2011/494p), which highlight the growing costs of biodiversity loss and ecosystem degradation, the benefits of investing in natural capital, and the need to integrate the values of nature across policy sectors. **Biodiversity and Ecosystem Insecurity: A Planet in Peril** by Ahmed Djoghla and Felix Dodds (Routledge, June 2011) emphasizes the need to place a realistic value on nature and the services that ecosystems provide. **Valuing the Environment: Economics for a Sustainable Future** by David Glover of the International Development Research Centre in Ottawa (IDRC, May 2010/120p) shows how poorly functioning markets, incomplete property rights, and misguided policies are harmful to the environment and future generations. **Ecosystem Services from Agriculture and Agroforestry: Measurement and Payment** edited by Bruno Rapidel *et al.* (Earthscan, May 2011/320p) shows viable mechanisms to compensate agricultural systems for the environmental services they provide. **Valuing Ecosystem Services: The Case of Multi-Functional Wetlands** by R. Kerry Turner *et al.* (Earthscan, May 2011, 23p) underscores the importance of ecosystem services valuation from a policy and project appraisal perspective. **The Law and Policy of Ecosystem Services** by J.B. Ruhl *et al.* (Island Press, 2007/345p) argues that natural capital is no longer generally in surplus, so the economic playing field must be adjusted into an ecological-economic playing field, with government regulating natural capital and viewing

ecosystem services as public goods. Similarly, **The New Economy of Nature: The Quest to Make Conservation Profitable** by Gretchen C. Daily of Stanford University and Katherine Ellison (Island Press, 2002/260p) argues that it was once reasonable to think of ecosystem services as free when natural capital was abundant and human activities limited; today, when nature everywhere is under siege, externalities must be considered. **You Can't Eat GNP: Economics As If Ecology Mattered** by Eric A. Davidson of Woods Hole Research Center (Perseus Books, 2000/247p) seeks to displace outmoded GNP thinking that ignores the value of natural resources.

The Economics of Nature and the Nature of Economics edited by Cutler J. Cleveland, David I. Stern, and Robert Costanza (Edward Elgar, 2001/293p) discusses the evolution of ecological economics, green national accounting, a green GNP, the need for a new growth paradigm, and formation of ISEE in 1987 (see APPENDIX #7). **An Introduction to Ecological Economics** by Robert Costanza, John Cumberland, Herman Daly, Robert Goodland, and Richard Norgaard (St. Lucie Press/ISEE, 1997/275p) covers the historical growth of economy and ecology, principles of ecological economics, institutions, and instruments. **Environmental Economics** by Clem Tisdell of University of Queensland (Edward Elgar, 1993) considers externalities, pollution control policies, cost-benefit analysis, intergenerational economic welfare, risk-taking, etc. **Economic Values and the Natural World** by David W. Pearce of University College London (MIT Press, 1993/129p) considers national priorities, modifying GNP, and applying economic valuation to project appraisal. **World Without End: Economics, Environment, and Sustainable Development** by David W. Pearce and Jeremy J. Warford of the World Bank (Oxford University Press/World Bank, 1993/440p) covers environmental economics, choice of discount rate, evaluating environmental damage and benefits, carrying capacity, market failure, pricing for cost recovery, etc. ***Choosing a Sustainable Future: The Report of the National Commission on the Environment** chaired by Russell E. Train (Island Press, 1993) focuses on the goal of sustainable development as the primary goal of economic policy, an end to price-distorting subsidies, revising GNP, and taxing environmentally harmful activities. **The Natural Wealth of Nations: Harnessing the Market for the Environment** by David Malin Roodman of the Worldwatch Institute (W.W. Norton, 1998/303p) focuses on prices that do not tell the environmental truth, shifting taxation to activities that hurt the environment, and trading of permits for pollution and resource depletion.

Still more excellent books from the 1990s deserve consideration, especially because ecological economics and environmentalism *appear* to have recently lost their momentum (perhaps eclipsed by the Great Recession). ***Taking Nature into Account: Towards a Sustainable National Income. A Report to the Club of Rome** edited by Wouter van Dieren of the Institute for Environment and Systems Analysis in Netherlands (Copernicus/Springer-Verlag, 1995/332p) argues that economics is not a science but a set of theories and choices; we must rid our economies of hypocrisy, the main hypocrisy being the System of National Accounts employed for nearly half a century. **Real Value for Nature: An Overview of Global Efforts to Achieve True Measures of Economic Progress** by Fulai Sheng of WWF (World Wildlife Federation, 1995/158p) critiques the UN System of National Accounts for failing to consider natural resources and environmental services, while including costs of reparative measures. **Investing in Natural Capital: The Ecological Economics Approach**

to Sustainability edited by Ann-Mari Jansson, Monica Hammer, Carl Folke, and Robert Costanza (Island Press, 1994/504p), derived from the 1992 ISEE second conference in Stockholm (see APPENDIX #7), considers a natural capital depletion tax, investing in cultural capital for sustainable use of natural capital, mitigation strategies for sea-level rise, etc. **Ecological Economics: The Science and Management of Sustainability** edited by Robert Costanza (Columbia University Press, 1991, 525p), derived from the 1990 ISEE first meeting in Washington (see APPENDIX #7), includes essays by Kenneth Boulding, Herman E. Daly, Garrett Hardin, Mary E. Clark, and Juan Martinez-Alier. ***The Gaia Atlas of Green Economics** by Paul Ekins *et al.* (Anchor Books/Doubleday, 1992; foreword by Robert Heilbroner) urges a four-capital model of wealth creation (ecological, human, manufactured, social), economic accounting for the environment, the Adjusted National Product as superior to GNP, creating eco-capital, etc.

3. SCIENTIFIC AND GLOBAL ORGANIZATIONS

One important indicator that the above critiques are being accepted, or simply discovered anew, can be found in the adaptation of these ideas by large and influential organizations. (This section can probably be considerably expanded, but a few items suggest what is happening). ***Beyond the Market: Designing Nonmarket Accounts for the United States** by the National Research Council (National Academies Press, 2005/209p) states that the National Income and Product Accounts constructed for the US in the 1930s omit a large part of the nation's product; high priority should be given to five areas: household production, investments in human capital and formal education, investments in health, government and non-profit sectors providing public goods and services (notably with volunteer labor), and environmental assets and services (value changes in stocks of natural resource and externalities associated with pollution). The World Bank takes an equally radical step forward with ***The Changing Wealth of Nations: Lessons for Sustainable Development** (World Bank, Oct 2010/270p), which estimates "comprehensive wealth" (including produced, natural, and human/institutional assets) for over 100 countries in 1995, 2000, and 2005.

The frequently overlooked Organization for Economic Co-operation and Development in Paris, arguably the world's largest think tank, issues hundreds of reports each year encouraging "a stronger, cleaner, fairer world economy." Several reports are quite relevant to new economic thinking. **Harnessing Markets for Biodiversity: Towards Conservation and Sustainable Use** (OECD, 2003/137p) provides a conceptual framework for the OECD Environmental Strategy of the First Decade of the 21st Century, arguing that the first step requires that economic values be made explicit: once undervalued biodiversity goods and services are valued, rational decisions can be made regarding use or conservation. **Costs of Inaction on Key Environmental Challenges** (OECD, Sept 2008/ 213p) enumerates direct financial costs (spending on health, remediation and restoration, and private defensive measures), indirect costs related to resource depletion and environmental degradation, costs associated with the loss of environmental use (aesthetics, visibility), and costs to biodiversity. ***Towards Green Growth** (OECD, June 2011/142p; GlobalForesightBooks.org Book of the month, June 2011) is the central report for the OECD Green Growth Strategy (www.oecd.org/greengrowth), a major on-going effort now embracing many related reports and encouraging OECD countries, notably South Korea, to go green. Green growth seeks to foster economic growth while

ensuring that natural assets continue to provide services on which our well-being relies. The strategy “takes into account the full value of natural capital as a factor of production” and promotes market instruments that impact price signals (such as green taxes) and regulatory policies providing incentives for better resource use, energy efficiency, etc. **Towards Green Growth: Monitoring Progress—OECD Indicators** (OECD, May 2011/141p) provides a framework for governments to monitor the natural asset base, the environmental quality of life, resource productivity, and greener management approaches.

The Report of the UN Secretary-General’s High-level Panel on Global Sustainability, **Resilient People, Resilient Planet: A Future Worth Choosing** (UN, 30 Jan 2012/94p; www.un.org/gsp; GFB Book of the Month, June 2012) provides 56 proposals to empower people, strengthen governance, and promote a sustainable economy. Proposal #27 urges natural resource and externality pricing instruments, long-term incentives for sustainable practices, national and international schemes to pay for ecosystems services (in water use, farming, fisheries, and forestry); #39 advocates a Sustainable Development Index or similar set of indicators by 2014 to measure progress. Even more important, ***Inclusive Wealth Report 2012: Measuring Progress Toward Sustainability** by the UNU International Human Dimensions Programme on Global Environmental Change (Cambridge University Press, July 2012/336p; www.ihdp.unu.edu/article/iwr) introduces the *Inclusive Wealth Index* (IWI) that combines measures of physical capital, human capital, and natural capital, and assesses 20 major countries, finding that 14 of them had positive IWI growth rates in the 1990–2008 period (led by China at 2.1% and Germany at 1.8%), and six nations had negative IWI growth rates, primarily due to high population growth. The broader IWI explicitly moves beyond the GDP measure, although many critics may still find it inadequate in several respects.

4. TEXTBOOKS SUPPORTING A BROADER VIEW

For students seeking a broader and more “real-world” view, as well as teachers who seek to assist their learning, at least seven textbooks are available.

***Macroeconomics in Context** by Neva Goodwin, Julie A. Nelson, and Jonathan Harris of the Tufts University Global Development and Environment Institute (M.E. Sharpe, 2009/437p) covers both standard topics and the broader “contextual economics” approach addressing such topics as macroeconomic goals (decent living standards, security, sustainability), macroeconomics for the 21st century and in global context, the three spheres of economic activity (business, public, household/community), and challenges for the 21st century (human development, sustainability, discounting the future). ***Microeconomics in Context** by Neva Goodwin, Julie A. Nelson, Frank Ackerman, and Thomas Weisskopf (M.E. Sharpe, 2nd Edition, 2009/522p) focuses on human well-being and the broader context of economic activity including the five forms of capital (natural, manufactured, human, social, and financial). **Microeconomic Theory Old and New: A Student’s Guide** by ISEE president John Gowdy of RPI (Stanford University Press, Jan 2010/208p; see APPENDIX #7) presents contemporary extensions of the core model of economics (Walrasian general equilibrium theory), as well as emerging alternatives. **The Economics Anti-Textbook: A Guide to Critical Thinking** by Rod Hill and Tony Myatt of the University of New Brunswick (Zed Books, May 2010/224p) might also be considered as a textbook.

Three textbooks are explicitly designated as “ecological economics.” **Ecological Economics: Principles and Applications** by Herman F. Daly of University of Maryland and Joshua Farley of the University of Vermont Gund Institute (Island Press, 2nd edition, Oct 2009/488p; see APPENDIX #6), first published in 2004, views Ecological Economics as a “transdiscipline,” discussing open and closed systems, types of resources, market failures, GNP vs. ISEW, redefining efficiency, sustainable scale, pricing and valuing non-market goods and services, and the importance of public goods. **Principles of Environmental Economics and Sustainability: An Integrated Economic and Ecological Approach** by Ahmed Hussen of Kalamazoo College (Routledge, 3rd edition, April 2013/480p) seeks to reconcile environmental and ecological economics. The first green textbook, however, was issued nearly twenty years ago by three UK professors! **Environmental Economics: An Elementary Introduction** by R. Kerry Turner, David Pearce, and Ian Bateman (Johns Hopkins University Press, 1993/328p) covers sustainable development, causes of environmental degradation (how markets and governments fail), cost-benefit thinking, valuing nature, coping with uncertainty, economic control of the environment, biodiversity, the ozone layer, and climate change.

5. ALTERNATIVE LABELS: HETERODOX, POST-KEYNESIAN, ETC.

The above-mentioned textbooks promote “contextual economics” and “ecological economics.” A possible problem in the evolution to new and appropriate economics is the profusion of labels. Some examples follow. **Post Keynesian and Ecological Economics: Confronting Environmental Issues** edited by Richard P.F. Holt of Southern Oregon University *et al.* (Edward Elgar, Jan 2010/296p) argues that mainstream economics is limited in its ability to analyze and fashion adequate policy and proposes a transdisciplinary approach that focuses on complexity, bounded rationality, and socio-economic dynamics. ***In Defense of Post-Keynesian and Heterodox Economics: Responses to their Critics** edited by Frederic S. Lee of UMKC (see APPENDIX #3) and Marc Lavoie of University of Ottawa (Routledge, Aug 2012/256p) discusses inter-paradigm cooperation, theoretical convergence, brands of economics, the Trojan Horse of pluralism, and how to move forward. **A Primer on Heterodox Economics** by Ingrid Rima of Temple University (Routledge, July 2012/256p) charts the development of various schools of thought such as post-autistic economics, evolutionary institutionalism, post-Keynesian economics, German-Austrian economics, and revival of political economy. **Toward an Integrated Paradigm in Heterodox Economics: Alternative Approaches to the Current Eco-Social Crisis** edited by Julien-Francois Gerber of Harvard University and Rolf Steppacher (Palgrave Macmillan, Jan 2012/256p) explores new economic directions and paradigms; contributors include Herman Daly and Juan Martinez-Alier. **Interdisciplinary Economics** edited by Wilfred Dolfsma of Rijksuniversiteit Groningen and Stefan Kesting of Auckland University of Technology (Routledge, March 2012/288p) pays homage to the late Kenneth Boulding for stretching the boundaries of different fields in the social sciences. **Beyond Reductionism: A Passion for Interdisciplinarity** edited by Katharine Farrell of University of Aarhus *et al.* (Routledge, April 2012/288p) assesses ecological economics, eco-feminism, and methodological pluralism. Contributors include Richard Norgaard, Juan Martinez-Alier, Mary E. Clark, and Vandana Shiva.

Much of this is prefigured by ***The Changing Face of Economics: Conversations with Cutting Edge Economists** by David Colander of Middlebury College *et al.* (University of

Michigan Press, 2004/358p), which distinguishes between mainstream economics and heterodox economics, identifies complexity as a defining factor at the edge of economics, and concludes that economics is moving from strict adherence to the holy trinity of rationality, greed and equilibrium to a more eclectic trinity of purposeful behavior, enlightened self-interest and sustainability. Much earlier, **The Methodology of Economic Thought** edited by Warren J. Samuels of Michigan State University (Transaction Books, 1978) provided critical essays by heterodox economists. **Evolutionary Economics** by former AEA president Kenneth E. Boulding of the University of Colorado (Sage, 1978) argues that EE, in contrast to “mainline economics,” embraces complexity and offers a “mutation that would strengthen the whole ecosystem of economic thought and make it richer and more varied,” while opening up “the possibility for very large improvements on public policy based on more realistic appraisals.”

Finally, mention should be made of **Socio-Economics: Toward a New Synthesis** edited by wide-ranging sociologist Amitai Etzioni of GWU and Paul R. Lawrence of the Harvard Business School (M.E. Sharpe, 1991/359p), with papers from a 1989 conference at HBS leading to formation of SASE (see APPENDIX #8), which promotes a more complex image of economic reality. **Morality, Rationality, and Efficiency: New perspectives on Socio-Economics** edited by Richard M. Coughlin of the University of New Mexico (M.E. Sharpe, 1991/411p) presents papers from the second SASE conference in 1990, criticizing neoclassical economics for neglecting morality. **If Women Counted: A New Feminist Economics** by Marilyn Waring of the NZ Parliament (Harper & Row, 1988/386p) complains that women’s work is counted out of the labor force, whereas non-productive military spending is counted; also considers the value of caring services and flaws of the GNP measure.

“Happiness Economics” has yet to be used as a label, but this is an important new angle of thinking that serves to quietly undermine notions of GNP and its growth. **The Pursuit of Happiness: Toward an Economy of Well-Being** by Carol Graham of Brookings Institution (Brookings Institution Press, June 2011/160p) argues that well-being is broader than income, and many efforts are underway to develop well-being metrics as complements to traditional income and GDP data. [This complements the earlier Report of the Brookings Task Force on Intangibles, **Unseen Wealth** by Margaret M. Blair and Steven M.J. Wallman (Brookings, 2001/124p), which focuses on intangible factors such as human capital as most important to societal wealth.] **Happiness: A Revolution in Economics** by Bruno S. Frey of University of Zurich (MIT Press, 2008; pb. edition Sept 2010/256p) describes how government can provide the conditions for well-being based on happiness research, which has “the potential to change economics substantially” by measuring subjective well-being, how humans value goods and services, and non-material values. **The Politics of Happiness: What Government Can Learn From the New Research on Well-Being** by former Harvard University president Derek Bok (Princeton University Press, March 2010/262p) summarizes happiness research that challenges conventional wisdom about what people want, e.g. economic growth and higher income. His spouse, Sissela Bok, also addresses this topic in **Exploring Happiness: From Aristotle to Brain Science** (Yale University Press, Aug 2010/208p). Notably, this argument was also made some two decades ago in **The Market Experience** by Robert E. Lane of Yale University (Cambridge University Press, 1991/630p), a past president of the American Political Science Association, who asserted that the market should be judged

by satisfactions people receive, rather than efficiency in producing goods and services, thus shifting the axis of debate toward how economic life contributes toward happiness or human development.

In sum, all of these books seek a broader and more appropriate view of economics. But there are many overlapping ways to construct such a worldview. Contextual Economics, Ecological Economics, Post-Keynesian Economics, Heterodox Economics, Interdisciplinary Economics, Real-World Economics, Evolutionary Economics, Socio-Economics, Feminist Economics and the study of happiness all offer valuable perspectives. Can these ten perspectives unite to overcome the hold of simplistic Zombie Economics?

6. WHAT IS REALLY NEEDED

The complaint that we need more good ideas is seriously incomplete and misleading. As amply illustrated above, there are plenty of sensible and thoughtful ideas about new and appropriate economics, as well as other important global issues. This plethora of constructive thinking includes both recently published books (not to mention articles) as well as those published two to three decades ago. Do economists and policymakers know of these books? Read these books? And substantially change their thinking as a result? One cannot help but sense that there is something very wrong. Surely, yet another book, article, or journal is not what is needed. Rather, what is really needed are actions in seven areas, none of which is sufficient on its own.

- 1) **A Clearinghouse for New Economics:** Ongoing collection and assessment of books and articles on new economics are needed, in order to accelerate learning. A global clearinghouse is roughly outlined by this biblioessay. It should provide far more extensive abstracts, indexing of ideas (i.e. the many definitions of wealth) and selection of best books—both popular and scholarly—by an individual or a panel to counter the glut of titles. The harsh but unspoken fact is that these titles compete with each other, but some are surely more valuable than others, while all should be recorded.
- 2) **The Summation:** An ongoing summary statement must bring together the best of these ideas about post-GDP measurement and the varieties of wealth that should be considered for well-being and sustainability in the 21st century. Serious dissenting views can and should be included, but some sort of ongoing provisional consensus is needed, following the lead of the Intergovernmental Panel on Climate Change. Similar to the IPCC, this consensus statement should be made in a variety of formats, including a brief executive summary and one or more popularized versions. The agreement will feature some alternative measurement scheme (ISEW, GPI, or Human Economic Welfare Index (HEWI) as discussed in *Cadmus* 1:1, 99-113), and efforts should begin to encourage usage initially as a supplemental measure, and eventually as a substitute for GDP. Any new and broader measure will be imperfect and controversial, but still far better than continuing use of GDP/GNP alone. The OECD might be a valuable partner or lead agency in this project.
- 3) **National Champions:** Designated national champions are needed to promote these ideas, as regards national policies. It is clearly inadequate to make only a global statement, although initiatives such as OECD's Green Growth Strategy deserve far

more attention (in the US, this set of relatively mild policy proposals would be considered in 2012 as daring and “radical”).

- 4) **Designing Debates:** In addition to Op-Ed pieces, talk show appearances, and anything else that works to publicize the summary statement and new gross indicator of wealth and progress, considerable attention must be paid to staging serious debates with the proponents of mainstream economics on college campuses, on fair-minded television channels, and in the print media. Debates are needed to overcome the structural problem of academic fragmentation and general inattention to serious issues that have been greatly aggravated in our era of infoglut. There will surely be well-funded plutocratic pushback from those who benefit from the current reigning ideas; this obstacle must be anticipated and somehow dealt with. Fair and thorough debates are difficult to arrange, but perhaps can start in academia, which claims to be open to all ideas.
- 5) **Indicators of New Economic Progress:** This biblioessay suggests by book titles alone that there is growing discontent with industrial era economics, especially after the still-unfolding disruptions of the Great Recession. In an important *New York Times* article five years ago (“In Economics Departments, a Growing Will to Debate Fundamental Assumptions” by Patricia Cohen, 11 July 2007, B6), Frederic S. Lee of the *Heterodox Economics Newsletter* (see APPENDIX #3) is cited as estimating that 5-10% of America’s 15,000 economists are heterodox. Presumably, the number of full or partial apostates is growing after the financial crisis, but by how much? Are there thorough debates in fact, or mere casual exchanges? And what about economists in other countries? A global survey is needed to evaluate economists’ changing allegiances and indicators such as which textbooks are used and how widely, and developments in global organizations and national policies are also needed.
- 6) **Priority Surveys:** As a way to draw attention to the evolutionary need for new and appropriate economics, ongoing surveys are needed among both economists and policymakers as to what is needed most in the years ahead. An exemplary model is provided by “Some Elements of the Next Global Economic System over the Next 20 Years,” Chapter 3 of **2009 State of the Future** by Jerome Glenn, Theodore J. Gordon, and Elizabeth Florescu (Millennium Project, Aug 2009; www.StateOfTheFuture.org), presenting results of an on-line questionnaire with 217 participants from 35 countries rank-ordering economic elements for improving the human condition. The top three elements were ethics as a key in economic exchanges and work relations, new GNP/GDP definitions that include all forms of national wealth, and a small “Tobin tax” on international transactions to support the global commons. Other elements include a redefinition of wealth and a new economic theory that accommodates many new “goods” such as information, new financial rules, a global minimum living wage applied to local conditions, and greatly increased public disclosure of tax havens and secret accounts.

“Universities are supposed to encourage progress in all areas of thinking and truth-seeking. The possible corruption of scholarly ideals is too important to be ignored.”

- 7) **Investigative Reporters Addressing Obstacles:** A number of heterodox economists have claimed that many economics departments in major universities lock them out for lack of publications in the “right” journals, which are controlled by mainstream economists. This charge, suggesting a huge scandal of repressed discourse in academia, quite possibly deserves a book-length inquiry by investigative reporters. Universities are supposed to encourage progress in all areas of thinking and truth-seeking. But, in fact, do many economics departments present obstacles to learning and the necessary evolution of new and appropriate economic thought for the 21st century? The possible corruption of scholarly ideals is too important to be ignored.

In sum, economics is increasingly a disputed discipline. A trickle of dissent began in the 1960s and early 1970s, e.g., **The Costs of Economic Growth** by Ezra J. Mishan (Praeger, 1967/190p), **The Entropy Law and the Economic Process** by Nicholas Georgescu-Roegen (Harvard University Press, 1971/457p), and **Toward a Steady-State Economy** edited by Herman E. Daly (W.H. Freeman, 1973/332p), which included 1966 essays by Kenneth E. Boulding on “The Economics of the Coming Spaceship Earth” and E.F. Schumacher on “Buddhist Economics.” The trickle became a small stream, arguably around 1978, and is now growing into a flood of justified but largely unanswered criticisms against the outmoded and ruinous conventional wisdoms. “Flood management” is now needed to accelerate the necessary global transition to new and appropriate economic thinking.

Other areas of economics also deserve close scrutiny, notably monetary theory and employment/unemployment. For example, the former is addressed by **Money and Sustainability: The Missing Link. A Report from the Club of Rome-EU Chapter** by Bernard Lietaer *et al.* (Triarchy Press, July 2012/210p); the latter by “Theories and Strategies for Full Employment” by Ashok Natarajan (*Cadmus*, 1:1, Oct 2010, 42-48). These subjects must be dealt with separately, but are no doubt linked to the general rethinking of economics that is now underway.

APPENDIX: TEN ORGANIZATIONS PROMOTING NEW ECONOMICS

At least ten organizations explicitly promote new and appropriate economics. This appears to be an encouraging development. But, however discomfiting, it is important to ask if they are succeeding in getting good ideas in high places, or simply in creating more publications (however learned and innovative) and fragmentation, at a time when “leadership in thought that leads to action” (the WAAS slogan) is increasingly needed.

Organizations are listed here in reverse chronological order of their founding.

1. **World Economics Association** (2011; www.worldeconomicsassociation.org): Founded by Edward Fullbrook, editor of the *Real World Economics Review* (2000). Began publication of *World Economic Review*, an open access journal, in Fall 2012; also publishes *Economic Thought*. Claims more than 10,000 members. Membership is free.
2. **Institute for New Economic Thinking** (2009; www.ineteconomics.org): Founding Sponsors: Jim Balsillie of CIGI, William Janeway of Warburg Pincus, and George Soros of Soros Fund Management. INET “was created to broaden and accelerate the development of new economic thinking that can lead to solutions for the great

challenges of the 21st century.” The mission is “to nurture a global community of next-generation economic leaders.” Partners with the Oxford Martin School and CIGI (Centre for International Governance Innovation, Canada). Bestows grants of \$25-\$250K.

3. **Association for Heterodox Economics** (1999): Holds annual conferences and publishes *Heterodox Economics Newsletter* (2004; <http://heterodoxnews.com>); founding editor, Frederic S. Lee, University of Missouri-Kansas City. Also publishes *Heterodox Economics Directory* (5th edition, Jan 2013). The Heterodox Microeconomics Research Network (HMiRN) was founded in 2011 to promote teaching and research in HM.
4. **Redefining Progress** (1994; www.rprogress.org): Founded in San Francisco by Ted Halstead; now in Oakland CA as “the nation’s leading public policy think tank dedicated to smart economics.” Seeks to shift public policy “to achieve a sustainable economy, a healthy environment, and a just society.” Introduced the Genuine Progress Indicator in 1995.
5. **International Confederation of Associations for Pluralism in Economics** (1993): ICAPE is a consortium of over 30 groups in economics to maintain diversity and innovation, holding that “each tradition of thought adds something unique and valuable.”
6. **Gund Institute for Ecological Economics** (1991): Founded by Robert Costanza as Institute for Ecological Economics at University of Maryland; moved to University of Vermont in 2002. Promotes research at the interface of ecological, social, and economic systems.
7. **International Society for Ecological Economics** (1989; www.isecoeco.org): Founded by Robert Costanza. Publishes *Ecological Economics* journal.
8. **Society for the Advancement of Socio-Economics** (1989; www.sase.org): Founded by Amitai Etzioni of GWU. Now headquartered in Paris. Publishes *Socio-Economic Review* to advance “an emerging meta-discipline,” in that economics is “embedded in society, polity, and culture.”
9. **New Economics Foundation** (1986; www.neweconomics.org): Established in London by leaders of The Other Economic Summit (TOES) to promote “economics as if people and the planet mattered.” Partners with NEI, below.
10. **New Economics Institute** (c.1980; www.NewEconomicsInstitute.org): Boston and Great Barrington MA. Formerly the E. F. Schumacher Society; promotes “global transition to a new economy” and “a green and fair world.” Leaders include Gar Alperovitz, Neva Goodwin, Richard Norgaard, James Gustave Speth, and David Orr.

Author’s Note: As background to this essay, I wish to acknowledge the many helpful conversations with my good friend Keith Wilde of Gananoque, Ontario, a truth-seeking economist with the Canadian government for 35 years.

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Book Review — Money and Sustainability: The Missing Link

*A Report from the Club of Rome – EU Chapter to Finance Watch
and the World Business Academy*

By Bernard Lietaer, Christian Arnsperger, Sally Goerner and Stefan Brunnhuber
Triarchy Press 2012

Review by

Ivo Šlaus, President, World Academy of Art and Science; Dean, Dag Hammarskjöld
University College for International Relations and Diplomacy, Zagreb

Garry Jacobs, Chairman of the Board of Trustees, World Academy of Art and Science;
Vice President, The Mother's Service Society

This report by WAAS Fellow Bernard Lietaer and his associates addresses important theoretical and practical issues regarding modern monetary systems. The central thesis of the report is that effective monetary systems must optimize performance on two complementary goals — efficiency of transactions and resilience in the face of destabilizing forces and events. National monetary systems maximize efficiency, but they lack the resilience to prevent catastrophic events such as those that have plagued the global financial markets and global economy over the past four years. The report advocates adoption of a variety of counter-cyclic, complementary currency systems to supplement and compensate for the inadequacies and vulnerabilities of national money systems.

The authors' effort to make explicit the conceptual framework underlying the current financial system is a very meaningful contribution to the subject of money. It is based on a wider perspective that views money and economy as subsets of society and recognizes the enormous potential for more effectively integrating the subset with the whole of which it is a part. It is important to note their emphasis on the enormously positive contribution which money has made historically to social development, a point often overlooked by critics of the current system.

The discussion on complementary money systems provides insight into the real sources of wealth creation in society. Complementary systems have the capacity to compensate, at least to some extent, for the structural deficiencies of the present system, and to do so in a counter-cyclic manner at precisely the times when national systems are least able to respond constructively. One very important characteristic

“A human-centered approach integrating the principles of economic equality constitutes the right foundation for evolving a comprehensive solution to the present crisis.”

of these systems is that they are essentially human-centered — based on unutilized human capacities and designed to serve unmet human needs — rather than market, money or technology-centered. A human-centered approach integrating the principles of economic equality constitutes the right foundation for evolving a comprehensive solution to the present crisis.

Alternative systems that release the productive forces of society and increase the velocity of money exchange are unique attributes that can have a stabilizing, counter-cyclic and stimulative effect on the real economy. The report also suggests that complementary currencies may be an effective way to promote investments needed to address climate change. This alone would make them immensely valuable. It is noteworthy that the USA had a multi-currency, decentralized money system throughout most of the 19th century, a period of very rapid economic and social progress.

1. Resilience & Efficiency

Resilience is a very important attribute of any social system. The occurrence of more than 400 financial crises over the past 40 years is sufficient evidence that the prevailing system of national currencies fails the test of resilience. Proponents argue that national currencies perform far better on the score of efficiency. But the current model may be considered efficient only in the narrowest of terms, with regard to the speed and ease of exchange. Viewed in terms of wider social purpose, here too it fails dismally. The report cites data estimating that the total cost of the 2007-2008 crisis in the US alone exceeds \$14 trillion, equivalent to about 90% of the country's GDP.

“Efficient allocation of money to maximize returns on that money is not the central purpose of either money or economy.”

The real measure of the efficiency of a monetary system should be its contribution to real economic growth and living standards. National money systems tap the organized market, but they fail to convert the enormous social potentials into wealth. Perhaps the most compelling indictment of the present system is that it does such a poor job of efficiently utilizing resources to produce and distribute wealth. Since the onset of financial deregulation in the 1980s, the growth of real incomes shows only marginal progress for the vast majority of citizens in OECD countries. For all the praise of efficient market theory, efficient allocation of money to maximize returns on that money is not the central purpose of either money or economy. Money is intended to support growth and functioning of the real economy to provide for the basic needs of all human beings.

The problem of financial instability raises issues addressed by Orio Giarini in his writings challenging the notion of equilibrium of a closed system. In “Science & Economics: The Case of Uncertainty and Disequilibrium”, he argues that economic equivalence between supply and demand is a tautology, not an equilibrium equation.¹ He views the monetarized economy as part of a larger whole which includes unmonetized as well as unmonetarized activities with real economic value. He also argues that the system needs to be understood in its

entirety as an open system that encompasses the entire society and environment. The basic ground for economic events is an inherent uncertainty, which represents the undefined source of all social creativity as well as the field from which new economic value is created.

The authors of the report refer to the international financial system as a Global Casino, a very fitting analogy which lays stress on the inherently non-productive character of the present system that diverts vast resources for speculation. Daily, some \$4 trillion is traded in foreign exchange transactions, only 2% of which makes its way into the real economy. At the root of this phenomenon is an increasing surplus of money arising from concentrated accumulation by the richest of the rich. Like every other form of concentration, beyond a point the positive accumulation is converted into a destructive force. The current system is geared and biased toward creation of money for speculation, rather than to support the real economy. The authors' arguments on efficiency and instability in relation to derivatives testify to the dangers inherent in speculative trading of financial instruments. To scientifically make a case against speculation would itself constitute a huge and original contribution to economic theory.

"To scientifically make a case against speculation would itself constitute a huge and original contribution to economic theory. "

“ *Economy is a subset of society and environment.* ”

Since national monetary systems are not likely to be replaced in the near future, it would be useful to examine the potential scope for improving resilience within the existing national money systems. This would only enhance the credibility and utility of adopting complementary currencies as a supplementary measure. Given the authors' intimate knowledge, experience and original perspective on money, it is quite possible that they may be able to come up with proposals that those within the system fail to recognize. That would create a powerful entry point and may provide a wider opportunity for presenting their more comprehensive approach.

2. Externalities

The discussion in the report on externalities clearly highlights the tendency of social systems to become compartmentalized and isolated from the wider social purpose they are intended to serve. The authors stress the fact that economy is a subset of society and environment. This places money and economy in a wider context. It highlights the fact that a subsystem both depends on and should serve or at the very least be in harmony with the wider interests of the entire system. By the same logic, the monetary system is merely one subsystem of economy and cannot function effectively unless it is in harmony with that wider entity. Here the observations about speculation and inequality are particularly important. Financial markets, which evolved as an adjunct and support for commerce and industrialization, have become more and more divorced from their original function, depriving the real economy of essential capital and even destabilizing it by their speculative behavior. The same is true of the banking system, since the walls separating commercial from investment banking have been torn down. Money goes for speculation rather than investment in production and jobs. In other words, even economy has become an externality to finance!

This perspective is an excellent complement to that of Orio Giarini, who has emphasized the importance of several other boundary lines between society and economy: He continuously reminds us that the fundamental purpose of economy is to promote human welfare; that the basic notion of value must be related to utility and human welfare; that there is an essential difference between the material-based, resource-limited industrial economy and the human-centered service economy we have today; that the principle of uncertainty must be incorporated into any true measure of economic value; and that the boundaries between monetarized and non-monetarized activities are ever-changing.

3. Governing Banking

The current crisis arose because banks have lost sight of their principal function, which is to serve society. The current crisis is a function both of the nature of the monetary system and the way the monetary system is being operated by the banks. In other words, even within the present system, there is considerable scope for changing the operating rules. Social progress often involves introducing internal controls to compensate for externalities. Are there ways in which the externalities threatening the national money system can be countered by internal rule, system and discipline? For example, when it nationalized the commercial banking system in 1969, the Government of India introduced priority sector banking regulations to ensure that growth of the commercial banks would be utilized to channel funds to agriculture and small industry, not merely servicing the urban corporate sector and the wealthy. What government did by central bank dictate can also be done by law.

Although the report focuses on inherent structural deficiencies in national currencies and the value of promoting complementary money systems, it is important to recognize the scope and need for actions to alter the functioning of the present system in order to make the analysis and recommendations comprehensive and complete. This need is only addressed in a minimalistic way by most of the actions now being taken by governments to reform banking and financial systems. A Tobin Tax or other measures to reduce speculation would have immense impact on the overall monetary and economic system. The Tobin tax is an excellent example of a public policy measure that can be used to curb the excesses of speculative money transfers and improve the resilience of the entire financial system by stabilizing system-wide effects. In recent years many internalized measures have been abandoned on the excuse of globalization. Such measures at the national level need to be introduced at the global level as well.

The discussion in Chapter V forcefully brings out the inherent propensity of the present system to magnify inequalities and the impact of growing inequalities on economic development, social stability, and ecological sustainability. The vast growth inequality of incomes and wealth seen in recent decades is very largely due to the biased manner in which banking seeks to maximize profits by supporting and leveraging speculative investments, rather than leveraging investments in the real economy.

After nationalization of the banks in India, a major proportion of lending was earmarked for agriculture, small industry and weaker sections of the population. This policy had immense benefits for development. Now that banking is becoming more commercialized, the stress on sectorial targeting is being lost. No wonder income and wealth inequalities are rising rapidly.

4. Plutocracy

The defects in the present system are not limited to the fact that banks control money creation. The problem extends far deeper, into the incestuous relationship between money and politics. The nexus between banks and government creates an effective plutocracy in which both money creation and law heavily favor the wealthy at the expense of the common man. A monetary system explicitly designed to support optimal growth and economic equality would operate very differently. Its impact would be much more like that of complementary money systems.

The concentration of economic and political power resulting from the present system is a subset of the broader issue of how power is distributed in society. Money is a form of social power which is interchangeable with other forms of power, a theme examined in a separate article on “The Power of Money”.² The principles governing the distribution of that power have immense impact on the results of the money system. Emerging during a period of intensive nationalism and concentration of power in centralized institutions, this means that the monopolistic approach to money creation can easily become a means to monopolize political and social power.

Power belongs to society and is intended for the benefit of society. So, systems need to be evaluated in terms of how they distribute power. In retrospect, that is how we evaluate monarchy, military dictatorship, fascism and state communism. All these systems concentrate power (whether military, political, religious, administrative or industrial) in the hands of an elite. The current system concentrates money power in a similar manner. The impact of excessive concentration of power in any form is well-documented. It inevitably leads to crises and revolutions. When power is truly directed for the benefit of the entire society, it loses its destructive edge.

5. Human Capital

The World Academy’s program framework emphasizes the central importance of human capital. This too is powerfully influenced by the monetary and banking system. The present system, which has led to high levels of government indebtedness, fails to take into account or monetarize the enormous value of social capital being created. In a paper for *Cadmus*, we argued that rising levels of education constitute an investment in future welfare and well-being.³ Therefore, investment in education should be treated as an acquired asset rather than an expenditure, even before it begins to reflect as growth of national income. This would offset the tendency to reduce expenditure on education as a first resort to balancing budgets. The same would apply to public health.

“The enormous waste of human resources – human capital – as a result of massive unemployment and underemployment is clear proof of a failed system.”

The enormous waste of human resources — human capital — as a result of massive unemployment and underemployment is clear proof of a failed system. Economist Randall Wray estimated that the real economic and social costs to society of high levels of unemploy-

ment and underemployment in the USA equal or exceed the cost of directly employing them. These costs are the result of a system that focuses on and rewards the efficiency of money, rather than the efficiency of all social resources. Of course, the same argument applies with equal force to the wasteful and destructive impact on the environment.

In sum, the report successfully highlights the potential of complementary currencies, which are one of a dozen ways in which the untapped social potential can be monetized and converted into wealth. The report would have even greater value had it fully applied the principles on which it is based to offer a solution to the present financial crisis. Full exploitation of this single mechanism can certainly release great wealth and extend the viability of capitalism, but it does not address the root issue of economic inequality which underpins the present system and thus cannot constitute a permanent solution. For this, the conscience of the world must awaken to embrace higher human values.

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Notes

1. Orio Giarini, "Science & Economics: The Case of Uncertainty and Disequilibrium," *Cadmus* 1, no.2 (2010): 25-34 <http://cadmusjournal.org/article/issue-2/science-and-economics-case-uncertainty-disequilibrium>
2. Garry Jacobs and Ivo Šlaus, "The Power of Money," *Cadmus* 1, no. 5 (2012): 68-73 <http://www.cadmusjournal.org/article/issue-5/power-money>.
3. Garry Jacobs and Ivo Šlaus, "Indicators of Economic Progress: The Power of Measurement and Human Welfare," *Cadmus* 1, no.1 (2010): 53-113 <http://www.cadmusjournal.org/article/issue-1/indicators-economic-progress-power-measurement-and-human-welfare>

Statement on Transforming Finance

BASED ON LIFE'S PRINCIPLES

We the signers hold these biological truths to be self-evident that the human species is interdependent with all other life forms on Planet Earth. Therefore, human societies, cultures, values and belief systems that are informed by and modeled on the following Life's Principles, which are strategies universal to all organisms, should provide the basis for all production and exchange of goods, community structures and services. This includes the design of monetary systems, investments, banking, financing, bartering, reciprocal exchange, payments, crowdfunding, compensation and unpaid gifting, sharing, co-operatives, reproduction of future, generations, provision of public goods, infrastructure, collective health, education and life-supporting services.

Hazel Henderson, Founder & President, Ethical Markets and
Janine Benyus, Co-Founder & President, Biomimicry 3.8

Click here for a [full list of signatories](#).

Book Review — Resilient People, Resilient Planet: A Future Worth Choosing

*Report of the United Nations Secretary-General's High-Level Panel
on Global Sustainability. NY: United Nations, 30 Jan 2012, 94p
(download full report or 22p Overview at www.un.org/gsp)*

Review by Michael Marien

Fellow, World Academy of Art and Science;
Director, GlobalForesightBooks.org

This report is the latest UN vision of what must be done for a sustainable planet—essentially an update of the 1987 Brundtland report—featuring 56 proposals to empower people, to promote a sustainable economy, and to strengthen governance.

1. Prologue: The Panel's Vision

“Our planet and our world are experiencing the best of times and the worst of times”: unprecedented prosperity and unprecedented stress, with growing inequality and rising waves of protest in many countries. Due to an array of overlapping challenges, “it is more urgent than ever that we take action to embrace the principles of the sustainable development agenda.” It is time for “genuine global action” that integrates the economic, social, and environmental dimensions of development. “That sustainable development is right is self-evident. Our challenge is to demonstrate that it is also rational—and that the cost of inaction far outweighs the cost of action.”

“It is time for “genuine global action” that integrates the economic, social, and environmental dimensions of development.”

The challenges are great, but so are the new possibilities when we look at old problems with fresh eyes: new technologies, markets, growth, and jobs from “game-changing products and services,” and new approaches to public and private finance that can lift people out of poverty. But “democratic governance and full respect for human rights are key prerequisites for empowering people.”

Thus, “the long-term vision of the High-level Panel on Global Sustainability is to eradicate poverty, reduce inequality and make growth inclusive, and production and consumption more sustainable, while combating climate change and respecting a range of other planetary boundaries.” This reaffirms **Our Common Future**, the 1987 report by the World Commission on Environment and Development, a.k.a the Brundtland report. [Note: Gro Harlem Brundtland is one of the 22 members of the Panel chaired by Finnish President Tarja Halonen

and South African President Jacob Zuma; Janos Pasztor served as Executive Secretary of the Panel.]

But what is to be done to make a real difference? We must grasp the dimensions of the challenge: unsustainable lifestyles, production and consumption patterns, and population growing from 7 billion to almost 9 billion people by 2040. “By 2030, the world will need at least 50% more food, 45% more energy, and 30% more water—all at a time when environmental boundaries are throwing up new limits to supply.” The current global development model is unsustainable. Sustainable Development (SD), introduced by the Brundtland report 25 years ago, remains a generally agreed concept, rather than a practical reality. This is so because it has “undoubtedly suffered from a failure of political will,” and it “has not yet been incorporated into the mainstream national and international economic policy debate.”

For too long, economists, social activists, and environmental scientists have talked past each other, almost speaking different languages. “The time has come to unify the disciplines, to develop a common language for sustainable development,” and to bring the sustainability paradigm into mainstream economics and the political process.

“The Panel presents 56 recommendations to advance its vision for a sustainable planet, a just society, and a growing economy.” They are briefly stated here as follows:

2. Proposals to Empower People to Make Sustainable Choices

“Real choice is only possible once human rights, basic needs, human security, and human resilience are assured.” Priority areas for action:

1. Achieve the Millennium Development Goals to eradicate poverty and reduce inequality;
2. Respect, protect, and provide human rights, as recognized in the 1948 Universal Declaration and the 1966 International Covenant;
3. Advance gender equality and women’s rights, including universal access to family planning and the right to inherit and own property;
4. Consider establishing a Global Fund for Education to close the primary school education gap by 2015;
5. Set a goal for universal access to quality post-primary and secondary education no later than 2030;
6. Provide vocational training, retraining, and professional development to fill skills shortages in sectors essential for sustainable development;
7. Adopt and promote “green jobs” and decent work policies;
8. Build business-government partnerships, and start-up services for young entrepreneurs;
9. Advance equality in the workplace;
10. Enable full participation of women in the economy by improving access to land and finance, supporting the rise of women leaders, etc.;
11. Promote open, transparent, science-based processes for labeling schemes that reflect the impact of production and consumption;

12. Make sustainable choices more easily available and affordable to consumers by setting sustainable product standards and applying price incentives and disincentives;
13. Integrate the concept of SD and sustainable consumption into primary and secondary school curricula;
14. Encourage discourse on the ethical dimensions of SD;
15. Create a new “ever-green revolution” for the 21st century that aims to at least double productivity while drastically reducing resource use and pollution;
16. Agree on global principles for sustainable and responsible land and water investment deals;
17. Establish and scale up integrated water resource management schemes;
18. Establish regional oceans and coastal management frameworks in major marine ecosystems;
19. Focus on an ecosystem-based approach to fisheries management;
20. Ensure universal access to affordable sustainable energy by 2030, while doubling the rate of improvement in energy efficiency;
21. Provide citizens with access to technologies, including universal telecoms and broadband networks by 2025;
22. Engage in international cooperation on innovation- and technology-oriented sustainable development on an enlarged scale;
23. Ensure that all citizens are provided with access to basic safety nets through appropriate national efforts;
24. Enhance resilience by managing the impacts of transition, especially by targeted social protection programs to deal with increasing environmental stress and potential shocks;
25. Accelerate efforts to assess regional exposure and vulnerability, and to take appropriate precautionary strategies;
26. Increase resources allocated to disaster risk reduction and adaptation.

3. Proposals for a Sustainable Economy

“Achieving sustainability requires us to transform the global economy. Tinkering on the margins will not do the job.” The current global economic crisis “offers an opportunity for significant reforms.” Needed policy action in key areas:

27. Establish price signals that value sustainability, so as to guide investment and consumption decisions; this includes:
 - a) Natural resource and externality pricing instruments, including carbon pricing;
 - b) Full consideration of women, youth, and the poor;
 - c) Reform national fiscal and credit systems to provide long-term incentives for sustainable practices, and disincentives for unsustainable behavior;
 - d) National and international schemes to pay for ecosystems services in water use, farming, fisheries and forestry;

- e) Address price signals that distort investment and consumption decisions (e.g., transparent disclosure of all subsidies);
 - f) Phase out fossil fuel subsidies by 2020, and reduce other perverse subsidies;
28. Shift to cost-effective sustainable procurement for public institutions over the next 10 years, issuing annual reports on progress;
 29. Develop sustainability standards for production and resource extraction;
 30. Develop a framework for sustainable development reporting, with mandatory reporting for corporations capitalized at >\$100 million;
 31. Align business practices with universally accepted principles, such as those in the Global Compact;
 32. Apply sustainable development criteria to the boards of sovereign wealth funds, public pension funds, stock exchanges and regulators, and credit rating agencies;
 33. Step up efforts of banks to promote SD;
 34. Build strategic partnerships between government, business, and local communities to implement SD investments;
 35. Create incentives for increased investments in sustainable technologies and infrastructures, including policies that reduce investor uncertainty and risk guarantee schemes;
 36. Use public investment for enabling frameworks that catalyse very substantial additional financing from the private sector;
 37. Shape investor calculations about the future through greater use of risk-sharing mechanisms, and enhancing certainty about the long-term policy and regulatory environment;
 38. Develop public/private partnerships for capacity-building and increased access to capital;
 39. Develop a Sustainable Development Index or similar set of indicators by 2014 to measure progress.

4. Proposals to Strengthen Institutional Governance

“We need to build an effective framework of institutions and decision-making processes at the local, national, regional, and global levels.” We must overcome the legacy of fragmented institutions established around single-issue ‘silos’; lack of flexibility in adaptation; and “a frequent failure to anticipate and plan.” Priority areas for action:

40. Ensure the rule of law, good governance, and citizens’ rights of access to official information and participation in decision-making;
41. Enable young people’s participation in decision-making at all levels, and support dialogue to encourage non-conventional voices;
42. Adopt “Whole-of-Government” approaches to SD issues, involving all relevant ministries;
43. Incorporate the SD perspective into legislation and budget processes, taking into

account the economic, social, and environmental dimensions of ending poverty, creating jobs, reducing inequality, energy, green growth, etc.

44. Strengthen the science/policymaking interface to facilitate informed political decision-making on SD issues;
45. Explore the concept and application of the critical issue of equity in relation to SD;
46. Step up efforts of bilateral donors and development banks to promote SD in a comprehensive way;
47. Strengthen UNEP, in that international SD policy is fragmented, especially the environmental pillar;
48. Develop a set of key universal SD goals to galvanize action, complement the MDGs, and promote a post-2015 framework;
49. Implement without delay the UN Secretary-General's "Sustainable Energy for All" initiative;
50. Prepare a regular and integrated SD Outlook report;
51. Launch a major global scientific initiative to strengthen the interface between policy and science, including regular assessments and digests of the science of "planetary boundaries," "tipping points," and "environmental thresholds" in the SD context;
52. Create a global SD council to improve integration of the three dimensions of SD, address emerging issues, and review SD progress;
53. Encourage States, in a constructive spirit, to explain their policies, share experiences and lessons learned, and fulfill their commitments;
54. Use the post-Rio+20 period of 2012-2015 for deliberate review and experimentation, incorporating tested solutions into any post-2015 development framework;
55. Expedite development of an SD strategy for the UN system, to better define responsibilities and to reduce duplication;
56. Make full use of the UN as the world's meeting place, convening periodic high-level exchanges on SD when leaders meet.

5. Comment

This long list of new, newish, and old proposals may be eye-glazing, but it is useful to present these ideas in a compact format, although many are overlapping, and the three basic categories are rather broad and fuzzy. Together, these proposals point to a new set of global goals to supersede the Millennium Development Goals for 2015—a "post-2015 framework" (#48).

Older and more familiar goals include gender equality (#3), green jobs (#7), integrated water management (#17), international cooperation on technology for sustainability (#22), price signals that value sustainability and ending fossil fuel subsidies (#27), sustainable public procurement (#28), and "whole-of-government" approaches (#42).

Notable proposals that seem new or relatively new include a Global Fund for Education by 2015 (#4), universal access to secondary education by 2030 (#5), an "ever-green revolu-

tion” to at least double productivity (#15), global principles for land and water investment deals (#16), universal access to affordable sustainable energy by 2030 (#20), a Sustainable Development Index by 2014 (#39), a set of universal sustainable development goals (#48), a regular SD Outlook report (#50), a strengthened science/policy interface to facilitate informed decisions (#44), and exploring the issue of equity as related to SD (#45).

This is a very ambitious agenda, but given the perilous economic situation at present (not mentioned), don’t get your hopes up too far, although positive surprises are always welcome! ALSO SEE similar reports from Canada’s Centre for International Governance Innovation (Post-2015 **Development Agenda: Goals, Targets and Indicators**; www.cigionline.org, Oct 2012, 63p), the Worldwatch Institute (**Moving Toward Sustainable Prosperity: State of the World 2012**; GFB Book of the Month, April 2012), OECD (**Towards Green Growth**; GFB Book of the Month, Aug 2011), and the Millennium Project’s 15 global challenges updated annually in its **State of the Future** reports; see GFB Book of the Month, Sept 2010. It would be valuable to examine all of these reports for similarities and differences, as well as the pile of more than 100 recent books on particular elements of sustainability (see GFB “Sustainability”). For example, although Worldwatch Institute has many proposals similar to the High-Level Panel, Worldwatch goes further in advocating “degrowth” in overdeveloped countries, limiting population growth, and discouraging livestock production.

A major omission of the High-Level Panel is the absence of any mention of academia, despite the Panel’s call to “overcome the legacy of fragmented institutions.” The fragmentation of knowledge in academia around fiefdoms and “silos” of perception is just as bad as the “single-issue silos” in government that the Panel criticizes; indeed, thinking systemically, academia may well be the major cause of this lack of systems thinking!

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Sovereignty and Nuclear Weapons: The Need for Real Sovereign Authority Rooted in the People's Global Expectations about Survival, Peace and Security

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Abstract

The current international security framework is based on an incomplete, anachronistic conception of sovereignty shaped largely by historical circumstance rather than principles of universal justice. Evolution of the global community over the past half century necessitates a reformulation of the concept to justly represent the rights of individual citizens and the global community as a whole. The reconceptualization of sovereignty is an essential condition for the elimination of major threats to global security, most especially those arising from the continued existence and proliferation of nuclear weapons and other weapons of mass destruction.

Two decades after the demise of the Cold War, the proliferation of nuclear weapons and the possibility of nuclear war still represent the single greatest threat to global peace and security, human health, well-being and the environment of our planet. The fundamental source of this threat is not accidental detonation or nuclear theft by a terrorist organization, but rather the continued insistence by the nuclear weapons states that possession, threat of use and actual use of nuclear weapons under some circumstances are legitimized under international law. At the heart of this claim lies their assertion of a right to self-defense as territorially-organized, sovereign nation-states. Thus, the rights of national sovereignty are juxtaposed to those of humanity and the global community as a whole and the concept of sovereignty is made a central pillar of the prevailing global security system.

It is important to keep in mind that the distinctive character of nuclear weapons is that they have the capacity for global mass destruction. They represent humanity's greatest existential threat. An inquiry into the relationship between nuclear arsenals and sovereignty raises an important question: Where is the authority to be located to validate or justify the creation, threatened use or actual use of nuclear weapons? In practice, it appears that nuclear weapons fall under the authority of the sovereign state and its claim to defend its vital national interests or existence. Such an inquiry requires a more critical understanding of the authority foundations of both sovereignty and humanity under current conditions of world order. We explore this question in the context of the historical evolution of sovereignty itself.

1. Origins of Sovereignty

The theoretical basis for national sovereignty evolved with the emergence of the modern nation-state. In the 16th and 17th centuries, scholars Bodin and Hobbes developed a theoretical justification for the authority of monarchical sovereignty based on the myth of the divine right of kings supported in practice by the sovereigns' monopoly over coercion. These ideas cost Charles I his head. Early theorists stopped short of vesting the sovereign with absolutist powers. In *The Law of War and Peace*, the Dutch jurist Grotius focused on the problem of a world for multiple sovereigns. Sovereigns needed to find ways of communicating with each other and correspondingly tempering claims to absolute powers. This required international law understandings based on reason, morality and ethical clarity. His idea of subordinating sovereignty to a rule of reason and morality was a powerful and enduring insight, which still has important traction in international law.

Theory was translated into practice in Europe by the Treaty of Westphalia in 1648, which was founded on the premise of the nation-state as a political, territorial unit. Originally applied to strong monarchies such as England, France, Scandinavia and Spain, the treaty put into juridical form the idea of sovereignty based on the sovereigns' control over territory and populations, not on their form of government or the manner in which that control was achieved. Sovereignty arose from the rights of the monarch, rather than those of its people. Later, it was applied as a legitimizing principle for nationalist movements in Italy and Germany in the 19th century, for countries arising from the dissolution of empires in Eastern Europe after World War I, and for the independence movements which marked the end of colonialism after World War II.

The current international legal system was founded at a time when the concept of national sovereignty was conceived as an essential basis for affirming the right of peoples everywhere to self-determination and freedom from foreign aggression or imperialism. It was a rallying principle on which participating nations could concur. It is noteworthy that of the 80 nation-states that constituted the international community in 1950, only 20 could be classified as democracies. Little wonder that the representative government was not adopted by the UN founders as an essential criterion for sovereignty. In practice, the founders of UN system accorded inordinate power and privilege to the victors in World War II based on their dominant military and political power at that time, rather than on principles of democracy, representative government or universal justice. This temporary expedient forms the basis for continued claims by the five permanent members of the UN Security Council and other countries, which refuse to recognize a higher principle of justice and morality than national sovereignty.

Today, international law and international relations remain largely based on the primacy of the territorially-organized sovereign nation-state. The sovereign state claims exclusive primacy and control over people and spaces within its own defined juridical sphere and an unqualified monopoly over national security. Its claim of near exclusive powers over national security rests on the idea that the state cannot be subject to a compact which may compromise its survivability. This claim of sovereign competence is applied to limit international obligation under the rule of law.

Viewed in an evolutionary perspective, it becomes evident that the concept of sovereignty was derived from prevailing conditions and based on the self-interest of consenting parties,

rather than on any peremptory principles of justice and morality. It is but natural that nation-states insisted on their own absolute authority and rights at a time when neither the individual citizen nor the global community was in a position to express or demand equal or appropriate recognition of authority over interests transcending the sovereign nation-state. In effect, the system was heavily skewed in favor of the national governments which conceived it, including many rulers who could make no legitimate claim to representing the will and aspirations of their own citizens.

The inherent limitation in the legitimacy of this principle became evident at the very founding of the UN system, when the principle of universal human rights was introduced into the UN Charter as a counter-weight to the absolute rights of nation-states. The UN Charter stresses that its authoritative character is rooted in the people of the world community. It sought to establish the idea that sovereign states are subject to the authority of the people of the world whose will represents the foundation for international law. Since then the global community has continued to evolve, but legal principle is still held ransom to the perceived vital interests of national governments. Recent developments pose new and further challenges to the traditional notion of sovereignty on multiple fronts.

This paper examines numerous factors which necessitate a reconceptualization of sovereignty in the light of humanity's evolutionary advance. Drawing upon significant earlier precedents and recent developments, it is intended to challenge the notion of sovereignty resting exclusively within the limits of a territorially-organized state. It argues for a wider, inclusive concept of sovereignty that accords full recognition to the rights of individual citizens and the rights of the human community as a whole.

2. Sovereignty and Nuclear Weapons

The question of nuclear weapons presents in stark form the limits of sovereignty as understood in the context of a broader, global eco-socio process. The central threat posed by nuclear and thermo-nuclear weapons is their potential for the partial or complete elimination of human civilization and planetary-scale destruction of the earth's biosphere. In short, the consequences of the threat of use or use of nuclear weapons transcend the interests of any nation-state and encompass the entire global community.

Although a small number of nation-states monopolize and deploy nuclear arsenals, those arsenals carry consequences extending far beyond the reach of the sovereign authority of the state. The conceptual foundations of modern international law limit the principle of sovereignty to exclusive jurisdiction over matters that are clearly within its compass of domestic competence (UN Charter, Article 2.7). Matters that are not exclusively within the domestic jurisdiction of a sovereign state are matters of "international concern." Limits to sovereignty arise from the fact that some matters which involve sovereign state powers and competences also affect the larger global community of states, as well as the global society of individual human beings in those states. Nuclear developments, deployments, threats and possible uses are clearly matters which impact international community of sovereign states and peoples.

A state's claim to be insulated from international authority is based on the fact that it has nuclear weapon systems under its exclusive control. On the basis of its territorial sovereignty, it claims immunity from international efforts to exercise control over such weapons systems.

This notion is, in effect, founded on the principle that force, control, and naked power trump the moral force and compulsion of global authority and the welfare of humanity.

3. Evolution of Sovereignty

Recent developments pose serious challenges to the traditional notion of sovereignty and a compelling case for reappraising the foundations on which prevailing international law is based.

- ***End of Colonialism and Imperialism:*** The right of all peoples to self-determination constituted the legal basis for the dissolution of colonial empires after World War II. Having suffered from centuries of external oppression and exploitation, new nations were necessarily most sensitive to protecting their claims to sovereignty as a counter to outside interference. These claims derived considerable legitimacy from the democratic form of self-government adopted by India in 1947. However, subsequent experience in many countries led to the formation of national governments based on arbitrary rule by a military elite or dominant majority, undermining the claim that these governments truly represent and act for the benefit of their own people. The apartheid regime formed in South Africa when it left the Commonwealth and became a republic in 1961 was only an extreme form of a prevalent practice. The intervention of the international community in Yugoslavia in the early 1990s was predicated on the premise that national governments were not entitled to suppress the national aspirations of significant minorities. Today human rights violations and genocide by national governments are widely recognized as taking precedent over national claims to sovereignty.
- ***Democratic Revolution:*** Although historically the notion of sovereignty was delinked from the type of government, the democratic revolution that has swept the world during the last half century poses conditions for the legitimacy of national governments. Between 1950 and 1970, the number of democracies doubled. During the decade of the 1990s, the number further increased by 60%. Today, 117 of the world's 195 countries are classified as democracies. It is now increasingly recognized that the claim of national governments to represent and speak on behalf of their own people derives from the free acceptance of that government by the people through some form of democratic mechanisms of governance.
- ***Rise of International Humanitarian Law:*** Violation of the human rights of their own citizens is now recognized as a legitimate basis for the international community to intervene in and even replace the controlling authority of a nation-state. The recent intervention of the international community in Libya and Syria exemplifies an underlying change in principle.
- ***Terrorism:*** The US invasion of Afghanistan in 2001 was based on the principle that national governments which provide refuge to populations that threaten other states or the international community are themselves not entitled to claims of sovereign legitimacy. This premise clearly limits the sovereignty of nation-states, even in instances when national governments do not actively participate in acts of aggression. The recent calls for classification of Pakistan as a rogue state for its active support to terrorism in India and Afghanistan are based on this premise. The rise of international terrorism is

compelling nation-states to adopt common standards of compliance as a requirement for participation in the international community, as evidenced by the near universal standards for airport security and the recent efforts to impose severe restrictions on tax evasion and money-laundering through the international banking system.

“Many advanced Western governments may be more accurately described as plutocracies than democracies, since inordinate power is wielded by a significant elite who control most of the nation’s wealth and dominate both its political and financial institutions.”

- **Plutocracy:** Democratic forms of government are the strongest present basis for the justification of national sovereignty derived from the will of the people. Yet even on the criterion that the governments represent the will of their people, few modern democratic nation-states actually meet objective standards of compliance. Many advanced Western governments may be more accurately described as plutocracies than democracies, since inordinate power is wielded by a significant elite who control most of the nation’s wealth and dominate both its political and financial institutions. The incestuous relationships and active collusion between the government and the wealthy have been exposed with unprecedented clarity during the recent international financial crisis. A similar situation exists in most developing countries, where the power of the wealthy and the corruption of the political and administrative class distort national policy and the application of justice for the benefit of the few. According to one recent measure, today there are only 23 real democracies in the world, of which only 9 may be considered fully democratic nations.* Unless and until objective standards for demonstrating truly democratic principles of governance are established and applied, the sovereign claims even of democratic states will be suspect.
- **Rise of Multinational Corporations:** The past few decades have witnessed the rapid growth of multinational corporations whose ownership, asset base and operating territory literally span the globe. Some of these MNCs control annual revenues and budgets larger than those of many nation-states. Juxtaposing the interests of one nation against the other, they are often in a position to compel states to compromise the interests of their own people, e.g. as evidenced by the ruinous impact of global free trade on the people in many developing nations and the rising levels of unemployment in OECD countries due to massive relocation of production capacity overseas. MNCs represent a de facto challenge to national sovereignty. The pressure of international banks for deregulation of the financial industry is the most recent and dramatic instance, compelling nation-states to forge higher levels of international cooperation.
- **Rising awareness of Global Environment:** One of the most powerful factors undermining notions of national sovereignty has been an increasing awareness of the impact of human activity on the earth’s environment and the absolute necessity of global cooperation to address environmental threats. Pollution of shared river resources in the 1960s, acid rain in the 1970s, and the nuclear fall-out from Chernobyl in the 1980s were earlier

* Only 9 countries scored 9 or higher on the 10 point scale as reported by the Economist Intelligence Unit in *Democracy index 2011*. See http://www.sida.se/Global/About%20Sida/S%C3%A5%20arbetar%20vi/EIU_Democracy_Index_Dec2011.pdf

expressions of this growing awareness at the regional level. Concern over the rapid disappearance of the ozone layer of the atmosphere 20 years ago resulted in concerted international action to eliminate whole classes of chemicals. The rise of global concern over climate change during the past decade has globalized the issue, since actions by nations anywhere have environmental impact on other nations everywhere.

- **Overexploitation of Global Commons:** Side by side with rising concern over climate change has been the rising concern over the principles of justice by which the world's limited resources are shared and allocated. The Law of the Sea Convention which came into force in 1994 is based on the premise that the rights of nation-states are subject to international consensus. Treaties regarding the exploitation of Antarctica and prohibition of weaponization of outer space are other instances.
- **Internet:** The modern revolution in communications technologies now provides civil society actors with the capacity to communicate and organize as never before. The emergence of the Internet as the first truly global social organization is an event of unparalleled magnitude, which is already revolutionizing human relationships globally, but whose full significance and impact will unfold in the coming decades. The impact of Wikileaks, the Arab Spring, and the Occupy Wall Street Movement is only a tiny fringe expression of an underlying alteration in the global lines of power. The international financial crisis, which was itself based on the emergence of the internet as a global communication system, more accurately reflects the magnitude of the power the new social organization will wield in future.

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4. Rise of the Global Third Estate

Apart from these general developments, there are others which more directly and specifically apply to the legality of nuclear weapons. The recent development of transnational civil society represents one of the most significant factors impacting on the notion of national sovereignty. Until recently, the people of the world had no direct means, other than through and by the representation of national governments, to express and exercise their sovereign rights. The emergence of international civil society provides an essential foundation for the development of a more representative international system. For the first time in history, contemporary civil society now encompasses all levels of social organization from the local and national to the global level. A plethora of institutions both outside and inside the political sphere are now engaged in contributing ideas to the culture of global civil society and exercising influence over the actions of government. Together, they very loosely define a new 'third estate' representing global civil society.

The Global People's Social Forum is an important example of the growing influence of this new global civil society. This non-partisan, non-governmental forum meets annually to

examine ways to secure a better future for humanity by championing a form of globalization that is counter-hegemonic and democratic. It stakes a claim to a global commons that affirms the most important values favoring the primacy of human well-being and dignity. The forum also represents a somewhat informal but serious global political drive to carve out a sphere of sovereignty that is global and rooted in people's expectations about security, well-being and dignity.

One of the most important consequences of the evolution of global civil society and the current state system has been the emergence of a new and beneficent diplomacy, sometimes called the 'new internationalism'. Central to this development has been the ability of global civil society to network with like-minded progressive states to forward an important component of the global agenda. For instance, global society played an important role in building support for establishment of the International Criminal Court and for the treaty outlawing personnel landmines. Global civil society also had a critical role in the agreement creating a global climate change treaty and continues to play an important role in this issue.

The food sovereignty movement targeting people's food security is another clear instance where global civil society is coalescing around an issue of importance to humanity as a whole, which cannot be adequately addressed at the national level. The movement focuses on the primacy of people's and communities' right to food and food production over trade concerns, their right to define land, fishing and agricultural policies economically, socially, ecologically and culturally appropriate to their unique circumstances. The food sovereignty movement seeks to secure the idea that food is a basic human right, to end the globalization of hunger, and to promote a more democratic and people's participatory global perspective.

5. People's Sovereignty in a Regional Context

The formation of the 27 nation European Union and the 17 nation Economic and Monetary Union (Eurozone) is only the most recent and dramatic instance in which national sovereignty is giving way to larger regional alliances that effectively undermine the traditional boundaries of national sovereignty. The current drama playing out in Europe regarding the financial failure of members of the Eurozone highlights the extent to which traditional notions of sovereignty have already given way. What is often lost sight of is the fact that the formation of the EU and the Eurozone was itself an effort by these nation-states to maintain and augment their competitiveness in the context of the increasing globalization of power. Civil society played a particularly important role in the founding of the European Parliament as an assembly popularly elected by citizens of the region.

These and many other initiatives, especially in the area of globalizing human rights, compel formulation of a new conception of sovereignty as a complement to prevailing notions based almost exclusively on nation-states. They are contemporary expressions of the interests of "the people" outside the boundaries of conventional sovereignty. These developments represent an important challenge to the omnipotence of sovereignty-dominated political and legal processes over important issues that affect the fundamental interests of people worldwide. The present conception fails because of its exclusivity and arbitrary attribution of legitimacy to national governments. The emerging conception must necessarily be far more inclusive and founded on truly representative democratic principles.

6. The Common Heritage of Mankind Doctrine

The doctrine of the common heritage of mankind asserts that there is a global doctrine for the protection of people's rights on a universal basis. First developed by Grotius as a foundation for modern international law of the oceans, whose views were a response to the Portuguese claim of a *mare clausum*, meaning that wherever the Portuguese flag was planted, the ocean was to be for the exclusive use of the Portuguese. Grotius challenged this with his doctrine of the freedom of the oceans based on the idea that the oceans were a common heritage of mankind.

The concept of heritage, which includes both natural and cultural creations, is reflected in the UN Law of the Sea Treaty. The common heritage of mankind has also been extended to the spatial reach of Antarctica as well as to outer space. Modern international law includes the moon and other celestial bodies that cannot be subject to appropriation by individual state sovereigns. The UN Outer Space Treaty specifically prohibits nuclear weapons being deployed in outer space. This provision also applies to the Moon Treaty. This doctrine is directly relevant to the elimination of nuclear weapons. Specifically, it prohibits the use of space for strategic nuclear-war-making purposes in the name of humanity.

There are other applications of the common heritage principle that touch on the right to life and future existence. For example, the UNESCO Declaration on the Human Genome and Human Rights stipulates that the Genome is the biological factor that underlines the unity of humanity. It extends the value we place on life to the human rights dimension of the Genome itself. This supports the notion of a people's right to the integrity of the Genome and applies to sovereigns and corporate entities alike. If we protect the Genome as a common heritage idea, the logic seems inescapable that humanity's existence as such is also a valid contender for inclusion as a common heritage value.

Additionally, the UNESCO declaration on the responsibilities of present generations towards future generations also contains provisions that are related to the common heritage of mankind idea. For example, Article 4 of the Declaration stipulates that present generations have the responsibility to bequeath to future generations an Earth which will not one day be irreversibly damaged by human activity, to use natural resources reasonably, to ensure that life is not prejudiced by harmful modifications of the ecosystems, and to ensure that scientific and technological progress in all fields does not harm life on Earth. Article 9 mandates that present generations ensure that both they and future generations learn to live together in peace, security, respect for international law, human rights and fundamental freedoms. To that end, they should avoid exposing future generations to the harmful consequences of armed conflicts, as well as all other forms of aggression and use of weapons, contrary to humanitarian principles.

People's global expectations about inclusive responsibility for the survival of present and future generations rooted in the doctrine of the common heritage of mankind must of necessity and logical coherence include the concern for threats to the extinction of the existence of humanity. These threats are inherent in the development, deployment, and possible uses of nuclear weapons. These expectations strengthen the claim of a global sovereignty rooted in the authority of all the people comprising mankind. The implications of the common heritage doctrine have also influenced the Global Eco-Village Network. Emergent ideas of a common

heritage inspire evolution of planetary democracy as well as the principles informing the Earth Charter civil society initiative.

“The global commons provides support for the idea that a threat to the earth/space community as a whole is a threat to the commons of humanity as a whole and a threat to the authority of sovereignty rooted in mankind as a whole. In this sense, the global commons thinking supports the principle of universal nuclear abolition.”

7. Global Commons Spaces

The emerging doctrine of the global commons originated in spaces within sovereign states preserved by sovereigns for the benefit of the people as a commons. From this idea, progressive scholars have sought to develop a strong body of scholarship stressing the importance of a common heritage which may be applied to designate spaces outside the reach of sovereign authority, including the earth’s atmosphere, oceans, tropical forests, biodiversity and Antarctica.

The global commons idea implicates spaces within sovereign states that are crucial to the well-being of humanity as a whole. This would include, for example, the importance of the Amazonian rain forests for world climate. The global commons idea focuses on interests that require cooperation or limitations on absolutist ideas of sovereignty. It also requires fresh thinking on the regimes needed to manage such spaces on behalf of the commons.

The global commons idea has important strategic implications for the empowerment of people’s interest on a global basis. It represents yet another initiative to establish the legitimacy of the people’s interest in a global commons, with the intention to empower the people in the commons and limit the power of sovereignty of the state. The global commons provides support for the idea that a threat to the earth/space community as a whole is a threat to the commons of humanity as a whole and a threat to the authority of sovereignty rooted in mankind as a whole. In this sense, the global commons thinking supports the principle of universal nuclear abolition.

8. People’s Sovereignty and Nuclear Threats of Global Extermination

It has long been declared that the use of nuclear and thermo-nuclear weapons far exceeds the scope of war as conventionally understood. Indeed, nuclear weapons have the capacity for the destruction of all of humanity and civilization. There is no system of law that can regulate the irrationality of this possibility. In 1962, the General Assembly declared that the use of nuclear weapons cannot be contained in armed conflict between rival contestants. All of mankind would be affected by their use. It concluded that using such weapons is contrary to the elementary laws of humanity and constitutes a crime against mankind and civilization. In 1972, by resolution, the General Assembly stipulated that there was a clear “desire of all peoples to eliminate war and above all, to prevent a nuclear disaster.” It called for

“The legitimacy of people’s sovereignty with regard to nuclear weapons can be affirmed by instituting a global referendum calling for the expeditious elimination of all nuclear weapon systems on earth.”

“a permanent provision on the use of nuclear weapons.” In 1980, the General Assembly stated by resolution that it was alarmed by the threat to the survival of mankind and the life sustaining system posed by nuclear weapons and their use, inherent in the concepts of deterrence. It again stated that the use of nuclear weapons was a crime against humanity.

In all of these references, the General Assembly, the most popular representative of the United Nations, has consistently referred to humanity as a whole in terms that are reconcilable with the sovereignty, common heritage, global commons ideas developed earlier. It would, therefore, appear that even the General Assembly of the UN roots the idea of abolishing the nuclear weapons in the authority of

the people comprising the earth/space community. This is, at least, a tacit acceptance of the idea of residual sovereignty rooted in people’s expectations of the entire world community.

In the Delhi Declaration in 1985, issued in the names of Rajiv Gandhi, Raul Alfonsin, Miguel de la Madrid, Julius Nyerere, Olof Palme and Andreas Papandreou, we find the voice of “we the people” in the background. These leaders stated that nuclear disaster can be prevented “if our voices are joined in a universal demand in defense of our right to live,” and that the future “of all peoples is at stake.” They urged “people, parliaments and governments... to lend forceful support” to their appeal for the elimination of nuclear weapons.

9. Conclusion

Clearly, there is a powerful emergent dynamic in practice and theory that insists upon the relevance, indeed, the vital importance of the idea of a global people’s sovereignty over spaces and issues that threaten the survivability and extinction of humanity. Until now the concept of global sovereignty has been undermined by the difficulty in evolving mechanisms to determine the will of humanity. Recent advances in communications technology substantially reduce this difficulty. Indeed, it is now feasible to poll global public opinion electronically. The legitimacy of people’s sovereignty with regard to nuclear weapons can be affirmed by instituting a global referendum calling for the expeditious elimination of all nuclear weapon systems on earth. Such a referendum could make unambiguous the demand of the people’s sovereign authority of the earth for an end to war and an end to the prospect of a nuclear version of it. The people’s sovereignty could affirm the illegality of both possession and use of nuclear weapons under any circumstances. It can call upon the International Court of Justice to review and revise its advisory opinion of 1995. It can also call for the mobilization of all available strategies to speed the advance of nuclear disarmament, including prohibition of the arms race in space or on earth and the testing of nuclear weapons. A global referendum in the name of the sovereignty of all peoples could affirm a universal demand of the right to live in a world free from the threat of nuclear weapons and the further demand that everything be done to avoid a nuclear disaster.

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World Peace Through Law: Rethinking an Old Theory

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Abstract

The author sets about re-thinking the old concept of “World Peace Through Law” (WPTL), meaning replacing the use of international force with the global rule of law. He traces the history of the WPTL concept back to the British legal philosopher Jeremy Bentham, whose 1789 ‘Plan for an Universal and Perpetual Peace’ proposed “a plan of general and permanent pacification for all Europe,” with troop reductions (especially in naval forces) and “a Common Court of Judicature” to resolve differences between nations. The author’s 21st century version of WPTL bears an uncanny resemblance to Bentham’s original proposal, calling for: 1) arms reductions (including abolition of nuclear weapons); 2) a four-stage comprehensive system of compulsory alternative dispute resolution (compulsory negotiation, mediation, arbitration, and adjudication); and 3) various enforcement mechanisms, including an international peace force.

The author argues that now is the time for adoption of what is a mainstream middle-of-the-road proposition (previously adopted by four past American presidents, including Theodore Roosevelt, William Howard Taft, Dwight David Eisenhower, and John F. Kennedy) that is neither “too little” (our current strategy of “collective insecurity”) nor “too much” (world government or world federalism). Instead, WPTL calls for only 1) arms reductions, not general and complete disarmament; 2) compulsory international alternative dispute resolution systems, not a global legislature; and 3) means of effective enforcement (including an international police force), not pacifism.

The whole concept of WPTL has been sadly neglected over the past half century. It is time to take a new look at the concept in this, the nuclear age.

From time immemorial, humanity has yearned for peace, but gone to war. Now, with the advent of nuclear weapons, it seems to most thoughtful people that war, at least major war, is no longer an option. Thus, the question becomes how to avoid it. One possible answer is “world peace through law,” somehow substituting the rule of law for the use of force to resolve international conflict. Many versions of this basic idea, once quite popular but now nearly forgotten, have been advanced over the years. One of the earliest proponents of the concept was British legal philosopher Jeremy Bentham, who in his 1789 *Plan for an Universal and Perpetual Peace*, proposed “a plan of general and permanent pacification for all Europe,” with troop reductions, especially in naval forces, and “a Common Court of Judicature” to resolve differences between nations, albeit without coercive powers.¹ Undoubtedly,

the “strongest” version of “world peace through law” is that of the world federalists, whose basic argument is that there are only two ways to resolve true conflict (meaning conflict that cannot be mediated) at the international level: (1) by war (no longer a good idea, since it could entail the extinction of at least our species), and (2) by law. Therefore, they say, choose law. And by “law,” world federalists mean law that is the only kind worth having, enforceable law, enforceable upon individuals, i.e., “world law”, created by a global legislature and enforced by global courts and global police, unlike the inadequate currently-existing international “law” and the weak system of UN-based “collective insecurity” that we now have.²

This article proceeds on the assumption that while the above syllogistic argument does convey an important truth, there is another possibility, that the “law” in the “world peace through law” formula need not be that of a global legislature, that there are other ways of securing world peace through law, both in the short term and in the long run.

If one takes a long view of our history as a species and as a gradually maturing international society, it becomes apparent that we are already on our way, while scarcely realizing it, to “world peace through law” through the one-step-at-a-time brick-by-brick, law-by-law, norm-by-norm accretion of a body of mere “international law” which is gradually becoming a body of genuine “world law” right before our unsuspecting eyes. And this world-law-in-the-making has been happening even during the recent administration of a U.S. government more scornful of international law and international institutions than any in U.S. history.

What in the world am I talking about? Well, first, I am talking about a vast body of international law, built up primarily over the past several centuries.* This is not to say that there were not significant developments in international law prior to this.³ One can start by looking at a mere short-list of the highlights of international law and institutions over the years, to remind ourselves of the progress that has been made, despite the serious shortcomings that remain.

MILESTONES IN INTERNATIONAL LAW

Hugo Grotius’ <i>On the Law of War and Peace</i> (attempts to describe what he insists on calling “a common law of nations,” albeit one that he freely admits is often not observed in the breach)	1625
Peace of Westphalia (modern system of sovereign European states; early attempt at international arbitration)	1648
Final Act of Congress of Vienna (principles for cooperative use of rivers etc.)	1815
Paris Declaration on Maritime Law (regulating maritime warfare)	1856
International Red Cross	1864
International Telecommunications Union	1865
<i>Alabama Claims</i> Arbitration (successful conclusion of U.S. claim against UK for permitting construction of warships for Confederacy during the Civil War)	1872
Universal Postal Union	1875

* Jeremy Bentham was the first to coin the term “international law.” M.W. Janis, “Jeremy Bentham and the Fashioning of ‘International Law,’” *American Journal of International Law*, 78, no. 2 (1984): 405-418.

Int'l Bureau of Weights & Measures & Int'l Meteorological Org.	1878
Int'l Copyright Union	1886
First Hague Convention (against poison gas, dum dum bullets; treatment of war prisoners)	1899
Permanent Court of Arbitration	1900
Second Hague Convention (outlaws war to collect debt; accepts "principle" of compulsory arbitration, but without operative machinery)	1907
International Labor Organization	1919
International Civil Aviation Organization	1919
League of Nations [but not the U.S.]	1920
World Court [later, Int'l Court of Justice (1945)]	1921
Kellogg-Briand Pact (normative principle outlawing war, but no enforcement mechanism)	1928
Geneva Conventions on Prisoners of War	1929
Bank for International Settlements	1930
UNESCO	1942
World Bank	1944
IMF	1944
United Nations	1945
FAO (food & agriculture)	1945
Nuremberg War Crimes Trials begin	1945
UNICEF	1946
GATT (General Agreement on Tariffs & Trade)	1947
Universal Declaration of Human Rights	1948
World Health Organization	1948
Geneva Conventions on War Crimes	1949
European Coal & Steel Community	1951
European Convention for Protection of Human Rights	1953
European Economic Community (EEC, Treaty of Rome)	1957
IAEA (Int'l Atomic Energy Agency)	1957
Antarctic Treaty	1959
OECD (Organization for Economic Cooperation & Development)	1961
McCloy-Zorin Agreement (draft plan for nuclear disarmament)	1961
Limited Test Ban Treaty	1963
World Food Program	1963
UNCTAD (integrating developing countries into world economy)	1964
UNDP (development)	1965

Outer Space Treaty	1967
Treaty of Tlatelolco (first of several nuclear free zone treaties)	1967
Nuclear Non-Proliferation Treaty	1968
Vienna Convention on the Law of Treaties	1969
Seabed Arms Control Treaty	1971
Biological Weapons Convention	1972
ABM Treaty [U.S. withdrew in 2001]	1972
SALT I Interim Agreement	1972
UNEP (environment)	1972
Threshold Test Ban Treaty	1974
Int'l Covenant on Economic, Social & Cultural Rights [but not U.S.]	1977
Convention on Elimination of Discrimination Against Women [id.]	1979
Law of the Sea Convention [id; entered into force, 1994]	1982
Montreal Protocol (regarding ozone layer)	1987
Intermediate-Range Nuclear Forces Treaty	1987
Convention on the Rights of the Child [only U.S. & Somalia have not ratified the convention]	1989
UN Framework Convention on Climate Change	1992
Chemical Weapons Convention	1993
Int'l Criminal Tribunal for the Former Yugoslavia	1993
WTO (more court-like sanctions than GATT)	1994
Comprehensive Test Ban Treaty [not approved by U.S. Senate]	1996
Ottawa Landmines Treaty [but not U.S.; entered into force, 1999]	1997
Kyoto Protocol [but not U.S.; entered into force, 2005]	1997
Int'l Criminal Court [but not U.S.; entered into force, 2002]	1998
UN General Assembly "Responsibility to Protect" Resolutions	2006
Convention on Cluster Munitions [but not U.S.; entered into force, 2010]	2008

What the above partial list makes clear is that, starting from the smallest measures, up through the sweeping changes of the post-WWII years, a growing body of global law of considerable depth and breadth has gradually been accumulated.^{†, 4} And while current international law and institutions are weak and ineffective (especially in the area of global security), they have grown stronger, despite the desperate opposition and scorn of the real-politikers.^{†, 5} To take one example in the area of international trade, initially, the GATT (1947) operated only upon a consensus decision-making basis. Now, however, as of 1994 the new WTO has precisely the reverse rule: sanctions are now automatic upon a finding by the WTO

* While disavowing any "teleological view," Judith L. Goldstein, Miles Kahler, Robert O. Keohane, & Anne-Marie Slaughter find that "[i]n many issue-areas, the world is witnessing a move to law."

† Cf. Percy E. Corbett, *The Growth of World Law*, at 50 (1971) (the international law system "leaves off precisely at the point where law is most necessary, namely where the urge to unrestrained action is strongest").

tribunal in the absence of a consensus blocking them.⁶ Similarly, the Law of the Sea Treaty (1982) replaces conflicting power-based claims with a comprehensive rule-based framework to regulate all ocean space (70% of the globe), its uses and resources, from navigation rights to definition of territorial waters and related boundaries to fishing limits and other ocean resources regulation, all enforced via compulsory dispute settlement procedures.⁷ Although the Law of the Sea Convention was the result of a number of UN-sponsored conferences, the UN has no direct role in its operation, so that it is free of the P-5 veto in the Security Council. This aspect of the Convention is particularly interesting. This “Law of the Sea approach”—a functionalist approach keyed to a particular problem and neatly avoiding the constraints of the P-5 veto—could be utilized in other problem areas.⁸ These two examples of “stronger” international law are emblematic of the kinds of evolutionary changes that have taken place and will only continue to occur over time. And gradually, as the edifice of international law becomes more and more impressive and gains greater acceptance, philosophical debates as to the nature of international law as “law” will become increasingly moot, as we move ever closer to eventually creating a comprehensive system of international courts empowered to provide the rule of law at the global level.*

This ongoing process, which is gradually turning weak “international law” into enforceable “world law,” is very much like the growth of the early common law. In twelfth and thirteenth-century Britain, the common law crimes and torts and other civil claims grew up one by one, gradually converting a hodgepodge of primitive local and feudal folk laws reliant upon self-help remedies (the blood feud and its composition) into a systematic legal structure of pleas of the crown and causes of action enforceable in the central royal courts.^{†, 9} Similarly, various legal institutions, such as trial by jury and an independent parliament, only gradually came into existence, after much hard work and acts of individual courage and even occasional battles, transforming what were arms of royal power and control into democratic individual-freedom-enhancing legal institutions.^{‡, 10} A similar evolutionary process is plainly at work in the field of international law.

It is true, of course, that many of the more recent advances (e.g., the ICC and the Law of the Sea Treaty) have not yet been ratified by the United States.^{§, 11} This, despite the fact that many in the U.S., such as Ambassador Elliot Richardson, chief U.S. negotiator at the Law of the Sea Conference, and Bill Pace, Convenor of the NGO Coalition for an International Criminal Court, played a key role in their creation. But this will change. America will eventually come to its senses and recover its historic courage, reject the craven politics of fear, and rejoin the world community. America may also come to realize that the cost of being World Cop is something it can no longer afford, with its current financial difficulties likely hastening this realization.

* Trial of German Major War Criminals (Goering et al), International Military Tribunal (Nuremberg), Judgment and Sentence (Sept. 30 & Oct. 1, 1946) (Cmd 6964, HMSO, London), at 40: “The law of war is to be found not only in treaties, but in the customs and practices of States which gradually obtained universal recognition, and from general principles of justice applied by jurists...” Also cf. Hans Kelsen, *Law and Peace in International Relations: The Oliver Wendell Holmes Lectures*, 1940-1941, at 145, 149-51 (1942) (arguing that the natural evolution of law is from courts to legislatures).

† Wayne R. LaFave & Austin W. Scott, Jr., *Criminal Law*, at 619 n.3 (1972) (common law crime of larceny by bailee finally recognized in 1473).

‡ Ranney, *Heritage* (also “Milestones in Legal History” chart appendix at 3-5 nn. 28, 31 & 39) (jury develops from royal inquest of local knights of the shire into independent criminal trial jury by 1220; subsequent development of right to freedom of deliberation in *Bushel’s Case* in 1670; parliament grows out of body mainly “judicial” in nature or merely advisory to king into independent legislature ca. 1258).

§ There is an excellent argument that these and similar treaties should have been adopted via the congressional-executive agreement process rather than via the treaty clause. The former method is more democratic than the latter since it involves both houses, the two-thirds requirement being based upon now-discredited concerns of the slaveholding states.

As difficult as it is to predict the future, if one were forced to make reasonable projections from the current trajectory of world-law-in-the-making to likely future world law and legal institutions, one can project the following general list (aside from the treaties already in existence but not yet signed by the United States):

“Imagine what it might mean to the world, and in particular, to the peace issue, if just one right — the right to full gender equity — were granted.”

- 1) Global Economic Regulations: This appears to be the next big thing on the horizon, if only because the latest financial crisis has pointed out to many businessmen and policymakers that something aside from the occasional chat amongst the G-20 is called for in vast areas of global economic (and environmental) regulation.*¹² No opinion is ventured here as to how such important changes might be accomplished, except to note that a “Law of the Sea problem-by-problem approach” is one of many that could be utilized.¹³
- 2) Human Rights Enforcement: There is a sense, of course, in which world peace and justice would follow automatically from the enforcement of global human rights.† Nevertheless, it is perhaps worth separating this area out for special attention. Without attempting an exhaustive review of the full set of human rights or how they might best be implemented, just imagine what it might mean to the world, and in particular, to the peace issue, if just one right—the right to full gender equity—were granted. It is not idle speculation to suggest that this one measure could by itself go a long way toward bringing about world peace.¹⁴
- 3) Global Rule of Law: We need to complete the task, only just begun, of creating comprehensive global legal structures that substitute the rule of law for the rule of force at the international level. This will require, at a bare minimum, not only an expanded International Criminal Court and an International Court of Justice with compulsory jurisdiction, but also some kind of international equity tribunal to resolve controversies of any nature whatsoever.‡ Mikhail Gorbachev in 1987 proposed expansion of the ICJ’s compulsory jurisdiction, discussions taking place for several years amongst the P-5.¹⁵ Compulsory adjudication in the ICJ would be preceded by compulsory negotiation, compulsory mediation, and compulsory arbitration, thus establishing a four-stage comprehensive system of global alternative dispute resolution.§
- 4) Arms Reductions and a United Nations Peace Force: Proposals for some kind of an international police force have been around for quite some time, having in fact been endorsed by at least four former U.S. presidents (Theodore Roosevelt, William Howard Taft, Dwight David Eisenhower, and John F. Kennedy).¹⁶ But the Cold War and other dif-

*Global corporations “have the ability to ‘venue shop’ and play countries against one another to win better legal, regulatory, or tax treatment” [e.g., Halliburton moving corporate headquarters from Houston to Dubai] such that “on transnational issues there is a [regulatory] void”. Approximately, 56 tax/regulatory/secretary havens involving 2 million companies and \$12 trillion in assets result in annual tax loss estimated at \$255 billion; GAO report shows that by now 60% of large U.S. corporations pay no taxes; havens also hide risky debt instruments, facilitate corruption, and cause the deaths of over 250,000 children a year due to illegal capital flight and lost tax revenue.

† It could be argued that the logic of the “world peace through law” formula would dictate an immediate International Human Rights Court. But as Justice Holmes famously said, “the life of the law has not been logic.” More importantly, the way in which I use the “world peace through law” syllogism does not contemplate “litigating” our way to peace or human rights, at least not until there is a greater global consensus on fundamental values.

‡ With expanded coverage of crimes such as possession of nuclear weapons or components.

§ Spelled out in detail in forthcoming book by the author.

ferences amongst countries have prevented anything like it from coming into existence. With the imminent move to abolition of nuclear weapons,¹⁷ accompanied by reductions in conventional weapons and their restructuring toward “defensive-only” postures (such as fixed anti-tank emplacements, which can be used only defensively),¹⁸ we will be on our way to an infinitely safer world. If we can combine that with increasing reliance upon an international peace force, we can look forward to an eventual situation where a UN Peace Force (UNPF) is considered to be the only legitimate means of confronting international violence or threats of violence. As to how this might be effectuated, a UNPF could be instituted via a “Law of the Sea” approach, avoiding the veto problem in the UN Security Council, and without the need to create a global government. The tough issue would be when and how a UNPF could be committed. Not much thought has gone into that issue, and it is admittedly a difficult one. Nevertheless, just as the Law of the Sea Convention was negotiated over time, in that specific context, so too some kind of operational mechanism (left vague on purpose) controlling the UNPF could be negotiated over time, whether some kind of weighted-voting or qualified-majority or other device altogether.

While it is true that a UNPF could turn out to be less than perfect, and it might not be, at least initially, precisely the kind of institution that the peace community would thoroughly approve, in the real world there is little that is perfect and there are disadvantages to almost everything.* Further, the fact that a UNPF might at some point be co-opted as a good idea by neo-conservatives ought not be off-putting, for unless a few ideas of the peace movement are adopted by “the opposition,” they will never go anywhere.¹⁹

Gradually, then, as we gain greater experience with already-existing UN peace forces, increasing their capacity and competence, with concomitant decreases in individual-country militaries, we will arrive at a point where the normal expectation will be that a UNPF is the only proper means of dealing with international conflict. Simultaneously, the universal expectation and eventual well-settled norm will become that such conflict should be subjected to a comprehensive array of international legal dispute resolution mechanisms. When that happens, we will have arrived at a place where we have in fact substituted the rule of law for the use of force to resolve international conflict. If and when that day comes, we will have realized humanity’s long-time dream of world peace through law, regardless of whether legal scholars would call it true “world law”.

Although the above proposal does place considerable emphasis upon the role of global law and legal institutions in securing peace, there is no suggestion that the law by itself will somehow miraculously transform the world.

“Obviously, more than mere “legal change” is required. It will take fundamental social and political change. Law, after all, is merely public sentiment crystallized.”

*One can foresee the objection that a UNPF might look too much like an overgrown NATO. Cf. Christoph Marischka, “How Ban Ki-moon subjugated the UN to NATO,” *Informationsstelle Militarisierung* (June 1, 2009) (www.imi-online.de/2009.php3?id+1925) (largely unnoticed document of 23 September 2008 signaling cooperation between UN and NATO objected to by Transnational Foundation for Peace & Future Research). This is not the place for an extended discussion of what a good UNPF would look like (although obviously it would need to be able to respond timely to diverse challenges in appropriately diverse ways, with fully-equipped well-trained crème de la crème officers and troops with access to adequate logistics, intelligence and communications, operating under well-organized and well-coordinated command and control and a clear mandate). Also, the emphasis upon a UN peace “force” ought not imply a too-ready resort to force. Rather, this must be a “peace and reconciliation” force that makes full use of conflict resolution and other non-violent approaches (e.g., something like the existing Non-Violent Peace force should be either a part of a UNPF or available to it).

Obviously, more than mere “legal change” is required. It will take fundamental social and political change. It will take increased understanding amongst countries, facilitated by vastly increased exchange programs, twinned-universities, worldwide internet and interfaith exchanges, a sharing of the most precious children’s literature of all cultures, and an infinite variety of similar measures. Law, after all, is merely public sentiment crystallized.

There are those who would argue, in fact, that all we really need for a peaceful and just future world is the classic idea of a gradual but steady decline in militarism and military spending worldwide, as part of a generalized increase in understanding amongst countries. For just as we would no longer think of going to war with Canada and just as Great Britain and France would no longer think of going to war, so too we and Russia and others may arrive at a similar point of mutual understanding in our joint destinies.*²⁰ And this new outlook would be accompanied by the de facto resort to readily available legal dispute resolution systems. Thus, there might not be that much need for a UNPF or at least not a large one.

“It will take what it always takes — courageous and determined action by individuals in the face of strong opposition — to fight for our vision of a world without war.”

Of course, all these things inevitably play together. Progress on one front will facilitate progress on other fronts. Progress on human rights and economic development will facilitate the kinds of normative changes needed for significant arms reductions and a greater willingness to rely upon global legal institutions. Arms reductions will permit greater economic and human development and a blossoming of humanity’s creative capacity for good. Deeper arms reductions will likely depend upon progress on building alternative security systems and stronger international legal structures. Even though we will face the inevitable setbacks, when one takes the long view of human history, the trajectory we are on is apparent.

This does not mean, of course, that it will happen by itself. Rather, it will take what it always takes—courageous and determined action by individuals in the face of strong opposition—to fight for our vision of a world without war. There are many paths to peace, things that we can do, collectively and individually, to secure a safe and sustainable world. But after many millennia of human development, we now face a profoundly fundamental choice: between what we have been doing for ages—bleeding the private and public sectors white with exorbitant military spending while hoping to escape the time-honored tradition in which individual empires rise and fall—and a whole new paradigm of global security, a world without war and with social justice, bottomed upon the global rule of law.

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*As hard as it is right now to envision reconciliation with our current worst enemies, I believe that we will eventually see precisely that, especially as there is a decline in what may appropriately be called toxic religiosity, on all sides. This will be the culmination, worldwide, of the Age of Reason. Cf. Thomas Paine, *The Age of Reason: Being an Investigation of True and Fabulous Theology* (1794). Cf. also www.strategicforesight.com (working for an “inclusive world”).

Notes

1. Jeremy Bentham, *Plan for an Universal and Perpetual Peace* (London : Sweet and Maxwell, 1927), 12-27.
2. Joseph P. Baratta, *The Politics of World Federation* (Westport: Praeger, 2004) (excellent history of movement, tracing origins of idea back to at least Dante [ca. 1311], Henry IV of France [1610], William Penn [1693], Abbe de Saint-Pierre [1713], Rousseau [1761], Kant [1795], and early British and American federalists, through huge popular successes post-WWII to its near extinction in the McCarthy Era; appendix has annotated bibliography of 77 books); Christopher Hamer, *A Global Parliament: Principles Of World Federalism* (Oyster Bay: Oyster Bay Books, 1998); and Grenville Clark & Louis Sohn, *World Peace through World Law* (Cambridge: Harvard University Press, 1966). Also cf. Louis Lusky, "Four Problems in Lawmaking for Peace," *Political Science Quarterly* 80, no. 3 (1965): 341-356; and Inis Claude, *Swords into Plowshares: the Problems and Progress of International Organization* (New York: Random House, 1971).
3. Harold J. Berman, "The Law of International Commercial Transactions (Lex Mercatoria)," *Harvard International Law Review* 19, no. 1 (1978): 274-277 (tracing origins of law merchant from Sea Law of Rhodes, ca. 300 B.C.). But with the evolution of the modern nation-state in the early 1600s, see Sheri Berman, "From the Sun King to Karzai: Lessons for State Building in Afghanistan," *Foreign Affairs* 89, no.2 (Mar/Apr 2010): 2-9, we see the growth of international law.
4. Mary Ellen O'Connell, *The Power and Purpose of International Law: Insights From the Theory & Practice of Enforcement* (New York: Oxford University Press, 2008). Also compare Judith L. Goldstein, Miles Kahler, Robert O. Keohane, & Anne-Marie Slaughter, *Legalization and World Politics* (Cambridge: MIT Press, 2001). Philip Allott, "The Emerging Universal Legal System," *International Law Forum* 3, no.1 (2001): 12-17. See also Martti Koskenniemi, *The Gentle Civilizer: The Rise and Fall of International Law 1870-1960* (New York: Cambridge University Press, 2002). Julius Stone, *Of Law and Nations: Between Power Politics and Human Hopes* (N.Y: W.S. Hein, 1974) and Eric Posner, *The Perils of Global Legalism* (Chicago: University of Chicago Press, 2009).
5. Compare Nicole Deller, Arjun Makhijani & John Burroughs, eds., *Rule of Power or Rule of Law? An Assessment of U.S. Policies and Actions Regarding Security-Related Treaties* (New York: Apex Press, 2003); Oona Hathaway, "Why We Need International Law: Undoing the Bush Administration's Damage," *The Nation*, November 19, 2007 (remarkable internal documents show deep aversion to international law); and Thomas M. Franck, "The Power of Legitimacy and the Legitimacy of Power: International Law in an Age of Power Disequilibrium," *American Journal of International Law* 100, no. 1 (2006): 88-106. Robert J. Delahunty and John C. Yoo, "Peace Through Law? The Failure of a Noble Experiment," *Michigan Law Review* 106 (2008): 923-939. Cf. also Corbett, supra, at 51 (those scornful of stumbling attempts to create world law "display a lack of perspective no less real than that of the hurried idealists whose visions they deprecate.").
6. Richard H. Steinberg, "Judicial Lawmaking at the WTO: Discursive, Constitutional, and Political Constraints," *American Journal of International Law* 98, no. 2 (2004): 247-275 and Bernhard Zangl, "Judicialization Matters! A Comparison of Dispute Settlement Under GATT and the WTO," *International Studies Quarterly* 52 (2008): 825-854.
7. Louis B. Sohn, Kristen G. Juras, John E. Noyes & Erik Franckx, *Law of the Sea in a Nutshell* (Minnesota: West, 2010) and www.un.org/Depts/los.
8. Center for War/Peace Studies, "What Elliot Richardson Thinks," *Global Report* no. 4 (1978). Elliot Richardson is interviewed by Richard Hudson, and states: "To me the Law of the Sea Conference offers the hope of a major contribution in the building of a global order. It may well be the single most important potential to build it."
9. Harold Berman, *Law and Revolution: The Formation of the Western Legal Tradition* (Cambridge: Harvard University Press, 1983) and James T. Ranney, *Heritage of Our Freedoms: Milestones in Legal History* 16 (1987): 19-20 (slideshow transcript and coursebook) (on file with author).
10. Theodore F. Plucknett, *A Concise History of the Common Law* (Boston: Little, Brown, 1956), 118-134 and Henry G. Richardson & George O. Sayles, *The English Parliament in the Middle Ages* (Philadelphia: University of Pennsylvania Press, 1981).
11. Oona Hathaway, "Treaties' End: the Past, Present, and Future of International Lawmaking in the United States," *Yale Law Journal* 117, no.8 (2008): 1236-1372.
12. Joseph E. Stiglitz, "A Real Cure for the Global Economic Crackup," *The Nation*, July 13, 2009; David Kennedy, "The Mystery of Global Governance," in Jeffrey L. Dunoff & Joel P. Trachtman, *Ruling the World? Constitutionalism, International Law, and Global Governance* (Cambridge: Cambridge University Press, 2009); David Rothkopf, *Power, Inc: The Epic Rivalry Between Big Business and Government—and the Reckoning That Lies Ahead* (New York: Farrar, Straus and Giroux, 2012); Ronen Palan, Richard Murphy & Christian Chavagneux, *Tax Havens: How Globalization Really Works* (Ithaca: Cornell University Press, 2010); James Gustave Speth & Peter M. Haas, *Global Environmental Governance* (Washington: Island Press, 2006); and Pierre de Senarclens & Ali Kazancigil, *Regulating Globalization: Critical Approaches to Global Governance* (New York: United Nations University Press, 2007).
13. For a good example of the problem-by-problem type of analysis required, see Jeffrey Dunoff, "Institutional Misfits: The GATT, the ICJ & Trade-Environment Disputes," *Michigan Journal of International Law* 15, no. 1042 (1994): 2-83.
14. See Paul Gordon Lauren, *The Evolution of International Human Rights: Visions Seen* (Philadelphia : University of Pennsylvania Press, 2010); Anatoly I. Adamishin & Richard Schifter, *Human Rights, Perestroika, and the End of the Cold War* (Washington, D.C.: United States Institute of Peace Press, 2009); William Burke-White, "Human Rights and National Security: The Strategic Correlation," *Harvard Human Rights Journal* 17 (2004): 249-280; and Hilary Mantel, "The War Against Women," *New York Review of Books* April 30, 2009.

15. Richard B. Bilder, "Judicial Procedures Relating to the Use of Force," in Lori Fisler Damrosch & David J. Scheffer, *Law and Force in the New International Order* (Boulder: Westview Press, 1991) and *Peace With Justice: Selected Addresses by Dwight David Eisenhower* (New York, Columbia University Press, 1961) (Eisenhower favors compulsory jurisdiction for ICJ).
16. See www.nobelprize.org/nobel_prizes/peace/laureates/1906/roosevelt-lecture.html (Theodore Roosevelt's 1910 Nobel Peace Prize lecture urges creation of world court with enforcement powers via "some form of international police power"); David Kennedy, "The Move to Institutions," *Cardozo Law Review* 8, no.5 (1987): 841-979; (prior to WWI, many prominent American jurists, statesmen, and industrialists, such as William Howard Taft, favored various forms of "world peace through law"); and Allan McKnight & Keith Suter, *The Forgotten Treaties: A Practical Plan for World Disarmament* (Melbourne: Law Council of Australia, 1983). (1961: McCloy-Zorin Statement of Agreed Principles for Disarmament Negotiations, initiated by Eisenhower and Kennedy, called for "general and complete disarmament," with "procedures for peaceful settlement of disputes" and "an international police force"). See also Lincoln P. Bloomfield, ed., *International Military Forces: The Question of Peacekeeping in an Armed and Disarming World* (Boston: Little, Brown, 1964); Elise Boulding & Randall Forsberg, *Abolishing War: Dialogue With Peace Scholars* (Cambridge: Boston Research Center for the 21st Century, 1998); and James T. Ranney, "Beyond Minimal Deterrence—An Approach to Nuclear Disarmament," *Journal of World Peace* 4 (1987):18-20.
17. Tad Daley, *Apocalypse Never: Forging the Path to a Nuclear Weapon-Free World* (New Brunswick: Rutgers University Press, 2010); "Press Launch – Abolishing Nuclear Weapons," *The International Institute for Strategic Studies* www.iiss.org/events-calendar/2008-events-archive/September-2008/press-launch-abolishing-nuclear-weapons; and Lawrence S. Wittner, *Confronting the Bomb: A Short History of the World Nuclear Disarmament Movement* (Stanford: Stanford University Press, 2009).
18. See Jonathan Schell, *The Abolition* (New York: Knopf, 1984); Harold Feiveson, Richard Ullman & Frank Von Hippel, "Reducing U.S. and Soviet Arsenals," *Bulletin of the Atomic Scientists* 41, no.7 (1985): 144; Robert Johansen, *Toward an Alternative Security System* (New York: World Policy Institute, 1983); and Mark Sommer, *Beyond the Bomb: Living Without Nuclear Weapons*, at 52-55 (Massachusetts: Expro Press, 1985).
19. Cf. Nina M. Serafino, "The Global Peace Operations Initiative: Background and Issues for Congress" (Washington, D.C.: Congressional Information Service, Library of Congress, 2009) (even the Bush Administration favored multilateral peace-keeping and stabilization forces).
20. Pankaj Mishra, "The Misunderstood Muslims," *New York Review of Books* November 17, 2005 (reviewing books arguing that religious and gender rights reform is already under way in most of the Muslim world); Karen Armstrong, *The Battle for God: Fundamentalism in Judaism, Christianity, and Islam* (London: HarperCollins, 2000) (the author in 2008 called for creation of an interfaith Charter of Compassion devoted to shared moral priorities to foster greater global understanding); Irshad Manji, *The Trouble With Islam Today: A Muslim's Call for Reform in Her Faith* (New York: St. Martin's Press, 2008) (arguing for a return to the original Muslim emphasis upon critical thinking); and Zachary Karabell, *Peace Be Unto You: The Story of Muslim, Christian, and Jewish Coexistence* (New York: Knopf, 2008). Cf. also "The online ummah," *The Economist* August 18, 2012 (internet is opening up Islam, allowing the younger generation to "distance themselves from older, traditional practices").

Federalism and Global Governance

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Abstract

It is becoming increasingly clear that the concept of the absolutely sovereign nation-state is a dangerous anachronism in a world of thermonuclear weapons, instantaneous communication, and economic interdependence. Probably our best hope for the future lies in developing the United Nations into a World Federation. The strengthened United Nations should have a legislature with the power to make laws that are binding on individuals, and the ability to arrest and try individual political leaders for violations of these laws. The world federation should also have the power of taxation, and the military and legal powers necessary to guarantee the human rights of ethnic minorities within nations.

1. Making the United Nations into a Federation

A federation of states is, by definition, a limited union where the federal government has the power to make laws that are binding on individuals, but where the laws are confined to interstate matters, and where all powers not expressly delegated to the federal government are retained by the individual states. In other words, in a federation each of the member states runs its own internal affairs according to its own laws and customs; but in certain agreed-on matters, where the interests of the states overlap, authority is specifically delegated to the federal government.

Since the federal structure seems well suited to a world government with limited and carefully-defined powers that would preserve as much local autonomy as possible, it is worthwhile to look at the histories of a few of the federations. There is much that we can learn from their experiences.

2. The Success of Federations

Historically, the federal form of government has proved to be extremely robust and successful. Many of today's nations are federations of smaller, partially autonomous, member states. Among these nations are Argentina, Australia, Austria, Belgium, Brazil, Canada, Germany, India, Mexico, Russia, Spain, South Africa and the United States.

The Swiss Federation is an interesting example, because its regions speak three different languages: German, French and Italian. In 1291, citizens of Uri, Schwyz and Unterwalden, standing on the top of a small mountain called Rütli, swore allegiance to the first Swiss

federation with the words “we will be a one and only nation of brothers”. During the 14th century, Luzern, Zürich, Glarus, Zug and Bern also joined. Later additions during the 15th and 16th centuries included Fribourg, Solothurn, Basel, Schaffhausen and Appenzell. In 1648, Switzerland declared itself to be an independent nation, and in 1812, the Swiss Federation declared its neutrality. In 1815, the French-speaking regions Valais, Neuchatel and Genève were added, giving Switzerland its final boundaries.

In some ways, Switzerland is a very advanced democracy, and many issues are decided by the people of the cantons in direct referenda. On the other hand, Switzerland was very late in granting votes to women (1971), and it was only in 1990 that a Swiss federal court forced Appenzell Innerrhoden to comply with this ruling. Switzerland was also very late in joining the United Nations (10 September, 2002).

The federal Constitution of United States of America is one of the most important and influential constitutions in history. It later formed a model for many other governments, especially in South America. The example of the United States is especially interesting because the original union of states formed by the Articles of Confederation in 1777 proved to be too weak, and it had to be replaced eleven years later by a federal constitution.

During the revolutionary war against England the 13 former colonies sent representatives to a Continental Congress, and on May 10, 1776, the Congress authorized each of the colonies to form its own local provincial government. On July 4, 1776 it published a formal Declaration of Independence. The following year, the Congress adopted the Articles of Confederation defining a government of the new United States of America. The revolutionary war continued until 1783, when the Treaty of Paris was signed by the combatants, ending the war and giving independence to the United States. However, the Articles of Confederation soon proved to be too weak. The main problem with the Articles was that laws of the Union acted on its member states rather than on individual citizens.

In 1887, a Constitutional Convention was held in Philadelphia with the aim of drafting a new and stronger constitution. In the same year, Alexander Hamilton began to publish “The Federalist Papers”, a penetrating analysis of the problems of creating a workable government uniting a number of semi-independent states. The key idea of “The Federalist Papers” is that the coercion of states is neither just nor feasible, and that a government uniting several states must function by acting on individuals. This central idea was incorporated into the federal Constitution of the United States, which was adopted in 1788. Another important feature of the new Constitution was that legislative power was divided between the Senate, where the states had equal representation regardless of their size, and the House of Representatives, where representation was proportional to the populations of the states. The functions of the executive, the legislature and the judiciary were separated in the Constitution, and in 1789 a Bill of Rights was added.

George Mason, one of the architects of the federal Constitution of the United States, believed that “such a government was necessary as could directly operate on individuals, and would punish those only whose guilt required it”, while James Madison (another drafter of the U.S. federal Constitution) remarked that the more he reflected on the use of force, the more he doubted “the practicability, the justice and the efficacy of it when applied to people collectively, and not individually”. Finally, Alexander Hamilton, in his “The Federa-

list Papers”, discussed the Articles of Confederation with the following words: “To coerce the states is one of the maddest projects that was ever devised... Can any reasonable man be well disposed towards a government which makes war and carnage the only means of supporting itself, a government that can exist only by the sword? Every such war must involve the innocent with the guilty. The single consideration should be enough to dispose every peaceable citizen against such a government... What is the cure for this great evil? Nothing, but to enable the... laws to operate on individuals, in the same manner as those of states do.”

Because the states were initially distrustful of each other and jealous of their independence, the powers originally granted to the US Federal Government were minimal. However, as they evolved, the Federal Government of the United States gradually became stronger, and bit by bit it became involved in an increasingly wide range of activities.

“The successes and problems of the European Union provide invaluable experience as we consider the measures that will be needed to make the United Nations into a federation.”

The formation of the Federal Government of Australia is interesting because it illustrates the power of ordinary citizens to influence the large-scale course of events. In the 19th century, the six British colonies that were later to be welded into the Commonwealth of Australia imposed tariffs on each other, so that citizens living near the Murray River (for example) would have to stop and pay tolls each time they crossed the river. The tolls, together with disagreements over railways linking the colonies, control of river water and other common concerns, finally became so irritating that citizens’ leagues sprang up everywhere to demand federation. By the 1890s such federation leagues could be found in cities and towns throughout the continent.

In 1893, the citizens’ leagues held a conference in Corowa, New South Wales, and proposed the “Corowa Plan”, according to which a Constitutional Convention should be held. After this, the newly drafted constitution was to be put to a referendum in all of the colonies. This would be the first time in history that ordinary citizens would take part in the nation-building process. In January 1895, the Corowa Plan was adopted by a meeting of Premiers in Hobart, and finally, despite the apathy and inaction of many politicians, the citizens had their way: The first Australian federal election was held in March 1901, and on May 9, 1901, the Federal Parliament of Australia opened. Australia was early in granting votes to women (1903). Its voting system has evolved gradually. Today, there is a system of compulsory voting by citizens for both the Australian House of Representatives and the Australian Senate.

“The European Union has today made war between its member states virtually impossible.”

The successes and problems of the European Union provide invaluable experience as we consider the measures that will be needed to make the United Nations into a federation. On the whole, the EU has been an enormous success, demonstrating beyond question that it is possible to begin with a very limited special-purpose federation and to gradually expand it,

judging at each stage whether the cautiously-taken steps have been successful. The European Union has today made war between its member states virtually impossible. This goal, now achieved, was in fact the vision that inspired the leaders who initiated the European Coal and Steel Community in 1950.

The European Union is by no means without its critics or without problems, but, as we try to think of what is needed for the United Nations' reform, these criticisms and problems are just as valuable to us as are the successes of the EU.

Countries that have advanced legislation protecting the rights of workers or protecting the environment complain that their enlightened laws will be nullified if everything is reduced to the lowest common denominator in the EU. This complaint is a valid one, and two things can be said about it: Firstly, diversity is valuable, and therefore it may be undesirable to homogenize legislation, even if uniform rules make trade easier. Secondly, if certain rules are to be made uniform, it is the most enlightened environmental laws or labor laws that ought to be made the standard, rather than the least enlightened ones. Similar considerations would hold for a reformed and strengthened United Nations.

Another frequently heard complaint about the EU is that it takes decision-making far away from the voters, to a remote site where direct political will of the people can hardly be felt. This criticism is also very valid. Often, in practice, the EU has ignored or misunderstood one of the basic ideas of federalism: A federation is a compromise between the desirability of local self-government, balanced against the necessity of making central decisions on a few carefully selected issues. As few issues as possible should be taken to Bruxelles, but there are certain issues that are so intrinsically transnational in their implications that they must be decided centrally. This is the principle of subsidiarity, so essential for the proper operation of federations: local government whenever possible, and only a few central decisions when absolutely necessary. In applying the principle of subsidiarity to a world government of the future, one should also remember that UN reform will take us into a new and uncharted territory. Therefore it is prudent to grant only a few carefully chosen powers, one at a time, to a reformed and strengthened UN, to see how these work, and then to cautiously grant other powers, always bearing in mind that wherever possible, local decisions are the best.

3. Weaknesses of the UN Charter and Steps Towards a World Federation

3.1 Laws must be made binding on individuals

Among the weaknesses of the present U.N. Charter is the fact that it does not give the United Nations the power to make laws which are binding on individuals. At present, in international law, we treat nations as though they were persons: We punish entire nations by sanctions when the law is broken, even when only the leaders are guilty, even though the burdens of the sanctions fall most heavily on the poorest and least guilty of the citizens, and even though sanctions often have the effect of uniting the citizens of a country behind the guilty leaders. To be effective, the United Nations needs a legislature with the power to make laws which are binding on individuals, and the power to arrest individual political leaders for flagrant violations of international law.

The present United Nations Charter is similar to the United States' Articles of Confederation, a fatally weak union that lasted only eleven years, from 1777 to 1788. Like it, the

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UN attempts to act by coercing states. Although the United Nations Charter has lasted almost sixty years and has been enormously valuable, its weaknesses are also apparent, like those of the Articles. One can conclude that the proper way to reform the United Nations is to make it into a full federation, with the power to make and enforce laws that are binding on individuals.

The International Criminal Court, which was established when the Rome Treaty came into force in 2002, is a step in the right direction. The ICC’s jurisdiction extends only to the crime of genocide, crimes against humanity, war crimes, and (at some time in the future) the crime of aggression. In practice, the ICC is open to the criticisms that it is often unable to enforce its rulings and that it lacks impartiality. Nevertheless, the establishment of the ICC is a milestone in humanity’s efforts to replace the brutal military force of powerful governments by the rule of law. For the first time in history, individuals are being held responsible for violating international laws.

3.2 The voting system of the UN General Assembly must be reformed

Another weakness of the present United Nations Charter is the principle of “one nation one vote” in the General Assembly. This principle seems to establish equality between nations, but in fact it is very unfair: For example, it gives a citizen of China or India less than a thousandth the voting power of a citizen of Malta or Iceland. A reform of the voting system is clearly needed. (A recent and detailed discussion of these issues has been given by Dr. Francesco Stipo, See Reference 1.)

One possible plan (proposed by Bertrand Russell) would be for final votes to be cast by regional blocks, each block having one vote. The blocks might be: 1) Latin America 2) Africa 3) Europe 4) North America 5) Russia and Central Asia 6) China 7) India and Southeast Asia 8) The Middle East and 9) Japan, Korea and Oceania.

Today, Ambassadors and Permanent Representatives at the United Nations are appointed by national governments. However, in the long-term future, this system may evolve into a more democratic one, where citizens will vote directly for their representatives, as they do in many federations, such as Australia, Germany, the United States and the European Union.

3.3 The United Nations must be given the power to impose taxes

If the UN is to become an effective World Federation, it will need a reliable source of income to make the organization less dependent on wealthy countries, which tend to give support only to those interventions of which they approve. A promising solution to this problem is the so-called “Tobin tax”, named after the Nobel-laureate economist James Tobin of Yale University. Tobin proposed that international currency exchanges should be taxed at a rate between 0.1 and 0.25 percent. He believed that even this extremely low rate of taxation would have the beneficial effect of damping speculative transactions, thus stabilizing the rates of exchange between currencies. When asked what should be done with the proceeds of the tax, Tobin said, almost as an afterthought, “Let the United Nations have it.”

The volume of money involved in international currency transactions is so enormous that even the tiny tax proposed by Tobin would provide the United Nations with between 100 billion and 300 billion dollars annually. By strengthening the activities of various UN agencies, the additional income would add to the prestige of the United Nations and thus make the organization more effective when it is called upon to resolve international political conflicts.

The budgets of UN agencies, such as the World Health Organization, the Food and Agricultural Organization, UNESCO and the UN Development Programme, should not just be doubled but should be multiplied by a factor of at least twenty. With increased budgets the UN agencies could sponsor research and other actions aimed at solving the world's most pressing problems — AIDS, drug-resistant infectious diseases, tropical diseases, food insufficiencies, pollution, climate change, alternative energy strategies, population stabilization, peace education, as well as combating poverty, malnutrition, illiteracy, lack of safe water and so on. Scientists would be less tempted to find jobs with arms related industries if offered the chance to work on idealistic projects. The United Nations could be given its own television channel, with unbiased news programs, cultural programs, and "State of the World" addresses by the UN Secretary General.

Besides the Tobin tax, other measures have been proposed to increase the income of the United Nations. For example, it has been proposed that income from resources of the sea bed be given to the UN, and that the UN be given the power to tax carbon dioxide emissions. All of the proposals for giving the United Nations an adequate income have been strongly opposed by a few nations that wish to control the UN through their purse strings, especially by the United States, which has threatened to withdraw from the UN if a Tobin tax is introduced. However, it is absolutely essential for the future development of the United Nations that the organization be given the power to impose taxes. No true government can exist without this power. It is just as essential as is the power to make and enforce laws that are binding on individuals.

3.4 The United Nations must be given a standing military force

At present, when the United Nations is called upon to meet an emergency, such as preventing genocide, an ad hoc force must be raised, and the time required to do this often means that the emergency action is fatally delayed. The UN should immediately be given a standing force of volunteers from all nations, ready to meet emergencies. The members of this force would owe their primary loyalty to the UN, and one of its important duties would be to prevent gross violations of human rights.

In the perspective of a longer time-frame, we need to work for a world where national armies will be very much reduced in size, where the United Nations will have a monopoly on heavy armaments, and where the manufacture or possession of nuclear weapons, as well as the export of arms and ammunition from industrialized countries to the developing countries, will be prohibited. (See reference 3).

Looking towards the future, we can foresee a time when the United Nations will have the power to make and enforce international laws which are binding on individuals. Under such circumstances, true police action will be possible, incorporating all of the needed safeguards for lives and property of the innocent.

“ ***The veto power of the Security Council must be eliminated.*** ”

One can hope for a future world where public opinion will support international law to such an extent that a new Hitler or Saddam Hussein or a future Milosevic will not be able to organize large-scale resistance to arrest, a world where international law will be seen by all to be just, impartial and necessary, a well-governed global community within which each person will owe his or her ultimate loyalty to humanity as a whole.

3.5 The veto power of the Security Council must be eliminated

We should remember that the UN Charter was drafted and signed before the first nuclear bomb was dropped on Hiroshima; and it also could not anticipate the extraordinary development of international trade and communication which characterizes the world today. The five permanent members of the Security Council, China, France, Russia, the United Kingdom and the United States, were the victors of World War II, and were given special privileges by the Charter as it was established in 1945, among these the power to veto UN actions on security issues. In practice, the veto power of the P5 nations has made the UN ineffective, and it has become clear that changes are needed. If the Security Council is retained in a World Federation, the veto power must be eliminated.

3.6 Subsidiarity

The need for international law must be balanced against the desirability of local self-government. Like biological diversity, the cultural diversity of humankind is a treasure to be carefully guarded. A balance or compromise between these two desirable goals can be achieved by granting only a few carefully chosen powers to a World Federation with sovereignty over all other issues retained by the member states. This leaves us with a question: Which issues should be decided centrally, and which locally?

The present United Nations Charter contains guarantees of human rights, but there is no effective mechanism for enforcing these guarantees. In fact, there is a conflict between the parts of the Charter protecting human rights and the concept of absolute national sovereignty. Recent history has given us many examples of atrocities committed against ethnic minorities by leaders of nation-states, who claim that sovereignty gives them the right to run their internal affairs as they wish, free from outside interference. One feels that it ought to be the responsibility of the international community to prevent gross violations of human rights, such as genocide; and if this is in conflict with the concept of national sovereignty, then sovereignty must yield.

In the future, overpopulation and famine are likely to become increasingly difficult and painful problems in several parts of the world. Since various cultures take widely different attitudes towards birth control and family size, the problem of population stabilization seems to be one which should be decided locally. At the same time, aid for local family planning programs, as well as famine relief, might appropriately come from global agencies, such as WHO and FAO. With respect to large-scale migration, it would be unfair for a country which has successfully stabilized its own population, and which has eliminated poverty within its own borders, to be forced to accept a flood of migrants from regions of high fertility. Therefore, the extent of immigration should be among those issues to be decided locally.

Security, and controls on the manufacture and export of armaments will require an effective authority at the global level.

The steps needed to convert the United Nations into a World Federation can be taken cautiously, one at a time. Having seen the results of a particular step, one can move on to the next. The establishment of the International Criminal Court is an important first step towards a system of international laws that act on individuals. Another important step would be to give the UN a much larger and more reliable source of income. The establishment of a standing UN emergency military force is another step that ought to be taken in the near future.

4. Obstacles to a World Federation

It is easy to write down what is needed to convert the United Nations into a World Federation. But will not the necessary steps towards a future world of peace and law be blocked by the powerholders of today? Not everyone wants peace. Not everyone wants international law.*

The United Nations was established at the end of the most destructive war the world had ever seen, and its horrors were fresh in the minds of the delegates to the 1945 San Francisco Conference. The main purpose of the Charter that they drafted was to put an end to the institution of war. It was hoped that as a consequence, the UN would also end the colonial era, since war is needed to maintain the unequal relationships of colonialism. Neither of these things happened. War is still with us, and war is still used to maintain the intolerable economic inequalities of neocolonialism. The fact that military might is still used by powerful industrialized nations to maintain economic hegemony over less developed countries has been amply documented by Professor Michael Klare in his books on Resource Wars.

Today, 2.7 billion people live on less than \$2 a day — 1.1 billion on less than \$1 per day. 18 million of our fellow humans die each year from poverty-related causes. In 2006, 1.1 billion people lacked safe drinking water, and waterborne diseases killed an estimated 1.8 million people. The developing countries are also the scene of a resurgence of other infectious diseases, such as malaria, drug-resistant tuberculosis and HIV/AIDS.†

Meanwhile, in 2011, world military budgets reached a total of 1.7 trillion dollars (i.e. 1.7 million million dollars). This amount of money is almost too large to be imagined. The fact that it is being spent means that many people are making a living from the institution of war. Wealthy and powerful lobbies from the military-industrial complex are able to influence mass media and governments. Thus, the institution of war persists, although we know very well that it is a threat to civilization and that it is responsible for much of the suffering that humans experience.

Today's military spending of almost two trillion US dollars per year would be more than enough to finance safe drinking water for the entire world, and to bring primary health care and family planning advice to all. If used constructively, the money now wasted (or worse

*The interested reader can find the "Hague Invasion Act" described on the Internet.

†It would be wrong to attribute poverty in the developing world entirely to war, and to exploitation by the industrialized countries. Rapid population growth is also a cause of poverty. Nevertheless, the enormous contrast between the rich and poor parts of the world is partly the result of unfair trade agreements imposed by means of "regime change" and "nation building", i.e. interference backed by military force.

than wasted) on the institution of war could also help the world to make the transition from fossil fuel use to renewable energy systems.

The way in which some industrialized countries maintain their control over less developed nations can be illustrated by the resource curse, i.e. the fact that resource-rich developing countries are no better off economically than those that lack resources, but are cursed with corrupt and undemocratic governments. This is because foreign corporations extracting local resources under unfair agreements exist in a symbiotic relationship with corrupt local officials.

As long as enormous gaps exist between the rich and poor nations of the world, the task turning the United Nations into an equitable and just federation will be blocked. Thus, we are faced with the challenge of breaking the links between poverty and war. Civil society throughout the world must question the need for colossal military budgets, since, according to the present UN Charter, as well as the Nuremberg Principles, war is a violation of international law, except when sanctioned by the Security Council. By following this path we can free the world from the intolerable suffering caused by poverty and from the equally intolerable suffering caused by war.

"Today, there is a pressing need to enlarge the size of the political unit from the nation-state to the entire world."

5. Governments of Large Nations Compared with Global Government

The problem of achieving internal peace over a large geographical area is not insoluble. It has already been solved. There exist today many nations or regions within each of which there is internal peace, and some of these are so large that they are almost worlds in themselves. One thinks of China, India, Brazil, Australia, the Russian Federation, the United States, and the European Union. Many of these enormous societies contain a variety of ethnic groups, a variety of religions and a variety of languages, as well as striking contrasts between wealth and poverty. If these great land areas have been forged into peaceful and cooperative societies, cannot the same methods of government be applied globally?

Today, there is a pressing need to enlarge the size of the political unit from the nation-state to the entire world. The need to do so results from the terrible dangers of modern weapons and from global economic interdependence. The progress of science has created this need, but science has also given us the means to enlarge the political unit: Our almost miraculous modern communications media, if properly used, have the power to weld all of humankind into a single supportive and cooperative society.

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Bibliography

1. Stipo, Francesco (2007). *World Federalist Manifesto. Guide to Political Globalization* Miami: Francesco Stipo, 1, 3, 21, 136.
2. Stipo, Francesco (2007). *United Nations Reorganization. The Unification of the UN System* Miami: Francesco Stipo.
3. International Commission on Peace and Food (2004). *Uncommon Opportunities: An Agenda for Peace and Equitable Development* 2nd Edition New Jersey: Zed Books, 43-46.

4. Hamilton, Alexander., James Madison and John Jay, "The Federalist Papers, (1787-1788)", *Project Gutenberg*.
5. Wynner, Edith (1954). *World Federal Government in Maximum Terms: Proposals for United Nations Charter Revision* New York: Fedonat Press.
6. Clark, Grenville., and Louis B. Sohn (1958). *World Peace Through World Law* Cambridge: Harvard University Press.
7. Russell, Bertrand (1961). *Has Man A Future?* Hammondsworth: Penguin.
8. Klare, Michael (2002). *Resource Wars: The New Landscape of Global Conflict* New York: Owl Books.
9. Klare, Michael (2008). *Rising Powers, Shrinking Planet: The New Geopolitics of Energy* New York: Henry Holt & Company.
10. Klare, Michael (2012). *The Race for What's Left: The Global Scramble for the World's Last Resources* New York: Metropolitan Books.
11. United Nations General Assembly (1950). "Principles of International Law Recognized in the Charter of the Nuremberg Tribunal and in the Judgment of the Tribunal".
12. Broms, Bengt (1990). *United Nations* Helsinki: Suomalainen Tiedeakatemia.
13. Rosenne, Shabtai (1985). *The Law and Practice at the International Court* Leiden:Dordrecht.
14. Rosenne, Shabtai (1995). *The World Court - What It Is and How It Works* Leiden: Dordrecht.
15. D'Arcy, J.,and D. Harris (2001). *The Procedural Aspects of International Law Volume 25* (Book Series) New York: Transnational Publishers.
16. Cullen, H. (2000). "The Collective Complaints Mechanism Under the European Social Charter," *European Law Review, Human Rights Survey* no.25: 18-30.
17. Bailey, Sydney Dawson (1998). *The Procedure of the Security Council* Oxford: Clarendon Press.
18. Akindale, R.A. (1976). *The Organization and Promotion of World Peace: A Study of Universal-Regional Relationships* Toronto: University of Toronto Press.
19. Applegate, J.S. (1992). *The UN Peace Imperative* New York: Vantage Press.
20. Atkins, S.E. (1988). *Arms Control, Disarmament, International Security and Peace: An Annotated Guide to Sources 1980-1987* Santa Barbara: Clio Press.
21. Ball, N. and T. Halevy (1996). *Making Peace Work: The Role of the International Development Community* Washington D.C.: Overseas Development Council.
22. Barnaby, F. (1988). Ed., *The Gaia Peace Atlas: Survival into the Third Millennium* New York: Doubleday.
23. Barton, J.H.(1981). *The Politics of Peace: An Evaluation of Arms Control* Stanford: Stanford University Press.
24. Bello, W. (1986), *Visions of a Warless World* Washington DC: Friends Committee on National Education Fund.
25. Boserup, A. and A. Mack (1998). *Abolishing War: Cultures and Institutions; Dialogue with Peace Scholars Elise Boulding and Randall Forsberg* Cambridge: Boston Research Center for the Twenty first Century.
26. Boulding, Elise et al. (1979). *Bibliography on World Conflict and Peace* Boulder: Westview Press.
27. Boulding, Elise et al., (1991). Eds., *Peace, Culture and Society: Transnational Research Dialogue* Boulder: Westview Press.

Myth, Hiroshima and Fear: How We Overestimated the Usefulness of the Bomb*

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Abstract

Recent evidence from World War II and the Cold War shows that nuclear weapons are far less useful as military and political tools than has been believed. Far from giving a madman the power to conquer the world, nuclear weapons are clumsy, dangerous technology with very few real uses — even if you have a monopoly.

No one does his best thinking when gripped by fear. This is why audiences often call urgently to people on movie screens: “No! Get out of the cabin! Now!” We know that people who are terrified make elementary mistakes of judgment.

It is hard to remember now how overpowering the fear of the Cold War was. Both sides were infected with deep suspicion and a sense that the other side was aggressive and threatening. The fact that these culturally different and unfamiliar peoples, with very different ideologies, had the power to obliterate each other made the tension even more acute. It should not be surprising, therefore, to discover that many of the ideas that gained currency during the Cold War have turned out, in retrospect, to be less than sound.

The most important “fact” about nuclear weapons is that they carry an enormously powerful emotional freight. People fear them. Henry L. Stimson, the retired American Secretary of War who made the first semi-official pronouncement on nuclear weapons in February 1947 said that the most important characteristic of nuclear weapons was that they were “psychological weapons.” Stimson knew that you could create the same kind of devastation and death using conventional bombers (if you used enough of them), but nuclear weapons, he believed, had a special fear factor. The United States bombed 68 cities in Japan in the summer of 1945. Many of them suffered as much damage as Hiroshima, but the Japanese had not suddenly surrendered after any of those conventional bombings. Even the bombing of Tokyo, which had led off the summer of city bombing in March, with an attack that left more people dead than any other attack (including Hiroshima) and destroyed more square miles than any other attack (something like the area of Washington, DC) had not forced Japan to surrender.¹

So, Stimson concluded, nuclear weapons were special. And soon everyone else concluded they were special, too. After all, the Japanese said they surrendered because of the bomb.

*Some of the arguments presented here are made in greater depth in the author’s forthcoming book: Ward Wilson, *Five Myths About Nuclear Weapons* (New York: Houghton Mifflin Harcourt, 2012), to be published on January 15, 2013.

The Emperor, in his surrender radio broadcast to Japan, talked about “a new and most cruel bomb” that the Americans had which had forced them to surrender. So, it was natural for Americans to believe that their new bomb was something special. And since America was alone astride the world after World War II — Europe was in a shambles, the Soviet Union was torn up, China was reeling, U.S. GDP represented more than 50 percent of the world’s GDP — the notion that nuclear weapons were the new currency of power spread easily outward to other countries from the United States. Russia built its own nuclear weapon in 1949. Great Britain followed not long after. And then France, and China and Israel. It was soon an accepted fact that nuclear weapons were the standard by which nations were judged. After all, only states with nuclear weapons got to sit on the UN Security Council.

And then came the Cold War: a period of tense confrontation in which every day seemed likely to provoke the crisis that would lead to the final war. Children practiced hiding under their desks. Communities found the deepest basements and stocked them with supplies to serve as bomb shelters in the event of war. In the United States there were periodic tests of the emergency broadcast system — emergency communications that would be used to warn that you had half an hour before the nuclear weapons started falling. You’d be watching a football game on a sunny fall afternoon and the TV would interrupt the game to test the emergency broadcast system and remind you that at even the most innocent of moments nuclear war might be only minutes away.

It was a time of immense fear. Those who did not live through it may find it difficult to believe and peculiar to imagine. But that fear had real practical political consequences. It made distrust seem the safest course. It made worst-case analysis seem prudent. It fueled mistrust and put tempers on edge. Is it any wonder that some of the doctrines developed during this period seem out of tune today? They have the misperceptions created by fear embedded in their logic. They are based on assessments of human nature made while standing under the Sword of Damocles.

The result of this process is described by Phillip Green in *Deadly Logic: The Theory of Nuclear Deterrence*. He talks about studying nuclear deterrence at length and being left with “a feeling of strangeness.”

Almost all the works one encountered in this field seemed invested with a tremendously authoritative air, an air that one associated with scholarly work in the most well-established and systematically researched disciplines; and somehow all this authority produced policy proposals and arguments that one felt absolutely no urge to agree with. Some were at best questionable; . . . Still others seemed absurd . . .²

And it turns out that Cold War doctrines about nuclear weapons — the doctrines that still justify nuclear-armed states today — are based on a series of mistakes of fact, errors of judgment, and plain myths.

The first and most important mistake is the original one. How could nuclear weapons accomplish in three days what conventional bombing had failed to do in five months? It turns out they couldn’t. It turns out that Japan surrendered because the Russians declared war on August 9th (the same day the United States bombed Nagasaki). Japan’s leaders knew that while they might be able to fight one last ditch defense on the beaches of southern Japan, and they might be able to inflict such severe losses that the Americans might offer better

surrender terms, that once you add a second great power to the mix, attacking from the north, the game was up. Stalin's assessment was that he would have troops in Hokkaido (the northernmost island of Japan proper) in 10 to 14 days. And that was a pretty realistic assessment. Japan's leaders thought about the prospect of surrendering to the United States or of being quickly overrun by communist troops and they chose to surrender to the U.S.

They said that they were surrendering because of the Bomb, however, because it made the perfect explanation for having lost. If you had just led your country into a disastrous war and were trying to maintain the legitimacy of your regime, what would you rather say: "We made mistakes. We had horrible lapses of strategic misjudgment. The Army and Navy consistently failed to work closely together. We blew it."? Or would you rather say, "The enemy made an unbelievable scientific breakthrough, they invented a miracle weapon, and that's why we surrendered. It wasn't our fault."?

The difficulty is that the Americans believed the Japanese. After all, they wanted to believe them. They wanted this weapon (that only they had) to be a miracle weapon. They wanted the 2 billion dollars (in 1942 dollars) that they had spent on developing it to have been worth it. They wanted the added prestige and increased influence that they imagined would go with possessing "miracle" weapons.

And once the Cold War broke out, suggesting that the Japanese had actually surrendered because the Russians had forced them to it would have been seen as unpatriotic in the United States. And because of the United States' preeminent position in the world, it was easy for others to accept this view of nuclear weapons and the world.

All the ideas about nuclear weapons include this notion that they carry a special horror and they are easy to believe: nuclear war would be horrible. But the idea actually has two parts. First, that a nuclear attack would be horrible to contemplate (no argument there). But secondly, and more importantly, that that sense of horror can motivate governments to make radically different decisions from the ones they would make if confronted only with conventional weapons (like surrender in a war.) It is this second half of the fundamental idea about nuclear weapons that is unproved. And on which so much of nuclear weapons theory depends.

Consider nuclear deterrence.³ It is often considered to be a relatively robust and powerful force. After all, despite a series of high-stakes crises during the Cold War, nuclear deterrence restrained leaders in every instance. At least, that is the story that proponents of nuclear weapons usually tell. And, as with Hiroshima, on the surface this story has a certain plausibility. We did live through the Cold War without a nuclear war. But when one examines the facts closely, the reality appears to be significantly different.

The most important piece of evidence in the debate about nuclear deterrence has always been the Cuban Missile Crisis. The most dangerous of all the Cold War Crises, it is also arguably the closest the world has come to nuclear war. It has traditionally been given a leading role in the proof that nuclear deterrence works effectively. I still remember sitting in the office of a distinguished international policy scholar at Harvard voicing doubts about nuclear deterrence, and having him say, "But surely, Ward, the Cuban Missile Crisis proves that nuclear deterrence works? After all, the Soviets put the missiles in, there was a risk of war, and then they took them out." What could be clearer than that?

Nuclear deterrence is sometimes described as operating this way: a leader is faced suddenly with the danger of nuclear war, he/she thinks about the consequences of nuclear war, and then pulls back. This is a sensible way to imagine the process. But if this is the way that nuclear deterrence works, then it is clear that it failed conspicuously during the Cuban Missile Crisis. After all, Kennedy was confronted with a crisis when he found out the Russians were putting nuclear missiles in Cuba. Kennedy was aware that the crisis might lead to nuclear war. (He himself said the crisis had between a one third and fifty-fifty chance of leading to war afterward.) In the week of secret deliberations that preceded the United States announcing that they were blockading Cuba, the possibility of nuclear war was mentioned 60 times. So, the danger of nuclear war was clear to Kennedy. Yet, he did not pull back. He did not confront the danger and then withdraw. He saw the nuclear danger and went full speed ahead.

And Kennedy was right to say that the danger of war was quite high. In his recent book, *One Minute to Midnight*, Michael Dobbs recounts at least three situations that came within minutes of leading to nuclear weapons being used. A Russian sub-captain wanting to fire nuclear torpedoes, U.S. fighters armed only with nuclear tipped missiles preparing to tangle with Soviet fighters over Alaska in order to save a lost U-2 spy plane.⁴ And so on. How can we say with confidence that nuclear deterrence works reliably when Kennedy so clearly ignored a real danger of nuclear war?

The Cuban Missile Crisis is not the only instance of nuclear deterrence failing. Again and again, if you revisit these crises, you find instances of leaders ignoring the danger of nuclear war and plunging ahead, intensifying a crisis. The Egyptians and Syrians attacking the Israelis despite the Israeli monopoly on nuclear weapons in 1973. Stalin ignoring the U.S. monopoly on nuclear weapons in order to blockade Berlin in 1948. During the Korean War, despite the fact that shifting of B-29s to England had supposedly kept the Berlin Crisis from escalating, a similar shift of B-29s to bases in the Pacific failed to keep China from entering the conflict.⁵ And so on. None of these failures of nuclear deterrence led to nuclear war, thankfully. But they are real failures nonetheless.

We know that ordinary deterrence — deterring children from misbehaving, deterring criminals, and so on — fails pretty regularly. Even the most severe penalties, like the death penalty, consistently fail to deter some percentage of the time. (After all, murders are still committed in the United States where the death penalty is employed.) The advocates of nuclear deterrence have always claimed that it is an exceptional form of deterrence, that the special psychological power of nuclear weapons gives nuclear deterrence a unique capability to effectively deter. Yet, these Cold War failures put the lie to this complacent confidence that nuclear deterrence will surely work even though other forms fail.

Of course, the same phenomenon of fear operated on nuclear deterrence that operated on nuclear weapons ideas in general. People desperately wanted to believe that nuclear deterrence worked because they were so afraid of nuclear war. They had a vested interest in interpreting Cold War crises as supporting the reliability of nuclear deterrence. But decisions made under extreme duress are rarely sound judgment.

The problem with nuclear deterrence is that the consequences of nuclear war are so extraordinarily terrible that failure is unacceptable. Nuclear deterrence must be so reliable that the

“Why would you ever keep technology that is very dangerous but not very useful?”

chances of it failing are vanishingly small. Otherwise, when we rely on nuclear deterrence, we are simply guaranteeing that one day we will face the catastrophe of nuclear war.

Nuclear weapons are inherently clumsy. Even when you try to use them selectively or “surgically” it is almost impossible to avoid killing innocent civilians in large numbers. In a famous study by Frank von Hippel and Sidney Drell in 1976, the two physicists looked closely at a surgical attack scenario in which the Soviet Union struck only U.S. missile silos, submarine bases and airfields that held nuclear armed bombers. The results of this carefully limited attack were appalling. Assuming March winds, something like 20 million American civilians would have died, mostly from radiation.⁶

It is perhaps telling that the U.S. military has increasingly used smart bombs and drones in its wars and battles, but has never yet found a situation that required the use of nuclear weapons in nearly seventy years. Most military targets are building-sized or smaller. Why would you want to use a weapon that forces you to destroy a third of the city in order to destroy one building? It seems far more likely that nuclear weapons are messy, blundering, outmoded weapons than that they are magical weapons with the power to coerce enemies in almost any circumstances. There is no question that nuclear weapons are dangerous. Any use carries with it the possibility of escalation to a catastrophic all-out war. But there is a serious question as to whether nuclear weapons are particularly useful. Why would you ever keep technology that is very dangerous but not very useful?

“A clear-eyed, unbiased reexamination of nuclear weapons is long overdue.”

We rely on nuclear deterrence out of habit and because doctrines and ideas developed during the Cold War got locked in place by fear. But now we have emerged from the Cold War. It makes sense to reexamine the ideas of that time and critically reevaluate evidence, doctrines and judgments made during that time. It seems clear in retrospect that we exaggerated the political power of nuclear weapons as a result of Hiroshima, and we exaggerated the reliability of nuclear deterrence by twisting the evidence of Cold War crises. A clear-eyed, unbiased reexamination of nuclear weapons is long overdue.

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Notes

1. For more on the Hiroshima argument see Ward H. Wilson, “The Winning Weapon? Rethinking Nuclear Weapons in Light of Hiroshima,” *International Security* 31, no. 4, (2007): 162-179.
2. Phillip Green, *Deadly Logic: The Theory of Nuclear Deterrence* (Columbus: Ohio State University Press, 1966), iv.
3. For a more in depth discussion on problems with nuclear deterrence, see Ward H. Wilson, “The Myth of Nuclear Deterrence,” *Nonproliferation Review* 15, no. 3 (2008): 421-439.
4. Michael Dobbs, *One minute to Midnight: Kennedy, Khrushchev, and Castro on the Brink of Nuclear War* (New York: Alfred A. Knopf, 2008).
5. For more on Cold War crisis failures of nuclear deterrence, see, forthcoming, Ward H. Wilson, *Five Myths About Nuclear Deterrence* (New York: Houghton Mifflin Harcourt, 2013).
6. Sidney Drell and Frank von Hippel, “Limited Nuclear War,” *Scientific American* 235, no. 5 (1976): 27-37.

How Reliance on Nuclear Weapons Erodes and Distorts International Law and Global Order*

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Abstract

Deployment of nuclear forces as an international security mechanism for prevention of major war is far removed from the world envisaged by the United Nations Charter in which threat or use of force is the exception, not the rule. Reliance on nuclear weapons has also distorted the development of major instruments of international humanitarian law and international criminal law, the 1977 Protocol I to the Geneva Conventions and the 1998 Rome Statute of the International Criminal Court. Awareness is deepening of the inherent incompatibility of reliance on nuclear weapons with an ever more entrenched normative framework stressing states' responsibilities to protect their populations against atrocities and to comply with international humanitarian law and the Rome Statute. International humanitarian law is a solid foundation for the emerging norm of non-use of nuclear weapons and for building a legal framework of a nuclear-weapons-free world that is universal in its approach.

The most serious problem arising from major powers' reliance on nuclear weapons is that one day, directly or indirectly, that posture probably will result in nuclear detonations as acts of state or non-state terrorism. Yet that terrifying risk has been flagged for decades without so far ending reliance on nuclear weapons under the label of "nuclear deterrence". Another approach is to examine the costs of reliance on nuclear weapons regardless of when or even whether they are again exploded in war or terrorism. There is damage to the environment, and harm to health. There is diversion of resources.

There are the debilitating psychological effects of living with the risk of apocalypse, and the moral corrosion of relying on a threat of annihilation for security. The first part of this paper addresses another cost: How reliance on nuclear weapons erodes and distorts a global public good – international order structured by international law. The second part turns the equation around and indicates how developing international law and institutions can contribute to the establishment of a world free of nuclear weapons.

"Sometimes, the most basic and simple truths are the ones that escape notice."

* This paper is based upon remarks delivered by the author at "The Dangers of Nuclear Deterrence" Conference, February 16-17, 2011, Nuclear Age Peace Foundation, Santa Barbara, California, USA, and at a Nuclear Abolition Forum side-event, "Moving Beyond Deterrence to a Nuclear Weapons Free World," May 9, 2012, at a Nuclear Non-Proliferation Treaty Preparatory Committee meeting in Vienna.

1. The Erosive Effect of Nuclear Weapons on International Law and Global Order

1.1 Nuclear Weapons and the United Nations Charter

Sometimes, the most basic and simple truths are the ones that escape notice. Compare the security supposedly provided by reliance on nuclear weapons with the security system envisaged by the United Nations Charter. Consider again these Charter provisions:

Article 2(3): All Members shall settle their international disputes by peaceful means in such a manner that international peace and security, and justice, are not endangered.

Article 2(4): All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations.

“Deployment of nuclear forces as an international security mechanism for prevention of major war is far removed from the world envisaged by the UN Charter in which threat or use of force is the exception, not the rule.”

The only exceptions to the prohibition on the threat or use of force are when the UN Security Council directs or authorizes force to maintain international peace and security, under Chapter VII, and the exercise of self-defense against an armed attack under Article 51.

Deployment of nuclear forces as an international security mechanism for prevention of major war is far removed from the world envisaged by the UN Charter in which threat or use of force is the exception, not the rule. International security allegedly provided by the permanent, ongoing threat of nuclear force, is the inverse of that world; it turns the UN Charter on its head. In its 1996 nuclear weapons advisory opinion, the International Court of Justice (ICJ) analyzed the UN Charter in relation to the legal status of “threat.”* However, the Court failed, though relevant arguments were made by the Philippines,¹ to consider the incompatibility of nuclear deterrence with the overall scheme and purposes of the Charter. It is past time to take up this fundamental question. To envision the peace and security of a world without nuclear weapons, as President Barack Obama memorably did in his April 2009 speech in Prague, we need only return to the vision — and the obligations — enshrined in the UN Charter.

Another key point relating to the UN Charter: Nuclear deterrence as now practiced is understood to involve major powers; other states are excluded and cannot acquire nuclear weapons. However, a just and therefore sustainable legal order requires that the same rules apply to all. One manifestation of the instability caused by the possession of nuclear weapons by some states but not others is the doctrine of preventive war. That doctrine was put into

* “Legality of Threat or Use of Nuclear Weapons,” Advisory Opinion of 8 July 1996, *International Court of Justice*, p. 226 (hereafter “Nuclear Weapons Advisory Opinion”), ¶¶ 47-48.

practice in the Iraq invasion and the Israeli strike on Syria and is raised with respect to Iran. Preventive war is contrary to the UN Charter, which permits use of force only in self-defense against actual or perhaps imminent attack or by authorization of the Security Council.²

Considering the subsequent rise of preventive war, the ICJ was prophetic in its 1996 opinion when it said:

*In the long run, international law, and with it the stability of the international order which it is intended to govern, are bound to suffer from the continuing difference of views with regard to the legal status of weapons as deadly as nuclear weapons.**

In short, major powers' reliance on nuclear weapons, and its corollary, preventive war to prevent proliferation, are profoundly corrosive of the UN Charter.

1.2 Nuclear Weapons and International Humanitarian Law

Reliance on nuclear weapons has also distorted the development of major instruments of international humanitarian law and international criminal law, the 1977 Protocol I to the Geneva Conventions and the 1998 Rome Statute of the International Criminal Court.

The story begins much earlier. In the years immediately following the US atomic bombings of Japanese cities, from 1945 to 1950, the International Committee of the Red Cross (ICRC) maintained strongly that the effects of nuclear weapons are incompatible with the protection of non-combatants in accordance with international law, and called for states to reach an agreement on the prohibition of such weapons.³

The major powers rebuffed the ICRC's call for a ban, and to make progress on other fronts, the ICRC basically went silent on the subject until its recent striking and important interventions. Protocol I is a comprehensive codification of the law of armed conflict governing the conduct of hostilities, a central part of what is now widely known as International Humanitarian Law (IHL). At the outset of its negotiation, the ICRC stated:

Problems relating to atomic, bacteriological and chemical warfare of subjects of international agreements or negotiations by governments, and in submitting these draft protocols [the ICRC] does not intend to broach these problems. It should be borne in mind that the Red Cross as a whole at several International Red Cross Conferences has clearly made known its condemnation of weapons of mass destruction and has urged governments to reach agreements for banning their use.⁴

As negotiated, in addition to prohibiting attacks upon civilians, Protocol I robustly prohibits indiscriminate means and methods of warfare. Thus it bans attacks "which cannot be directed at a specific military objective,"[†] attacks whose effects cannot be limited and consequently are of "a nature to strike military objectives and civilians or civilian objects without distinction,"[‡] and area bombing as practiced in World War II.[§] It also bans disproportionate attacks, those "which may be expected to cause incidental loss of civilian life ... which would

*Nuclear Weapons Advisory Opinion, ¶ 98.

† Article 51(4)(b).

‡ Article 51(4)(c).

§ Article 51(5)(a).

be excessive in relation to the concrete and direct military advantage anticipated.”* It additionally prohibits attacks “against the civilian population or civilians by way of reprisals.”† And it bans employment “of methods or means of warfare which are intended or may be expected, to cause widespread, long-term and severe damage to the natural environment.”‡

Nuclear weapons could not be used in compliance with Protocol I’s detailed prohibitions. However, citing the above-quoted ICRC statement, the United Kingdom, the United States, and some allied countries upon signing or ratifying denied the application of “new” rules contained in Protocol I to nuclear weapons.⁵ France took the extreme position of denying that any provision of Protocol I, whether or not it codifies customary law, applies to nuclear weapons.⁶ In its advisory opinion, the ICJ noted that “all states are bound by those rules in Additional Protocol I which, when adopted, were merely the expression of the pre-existing customary law.”§ Customary law is based upon state practice and legal opinions and is universally binding, regardless of whether a state is a party to a relevant treaty.

What do the United States and United Kingdom accept as pre-existing customary rules codified in Protocol I? Certainly the prohibition of attacks upon civilians, as well as a general rule – not necessarily as formulated in Protocol I — that collateral effects must be proportionate to the military advantage. However, at least the United States does not clearly accept the customary status of the various specific rules prohibiting indiscriminate attacks, and both reject the customary status of the prohibitions of reprisals and of widespread, severe, and long-term damage to environment. In their view, use of nuclear weapons could be compatible with the customary rules they do accept.

Without specific reference to Protocol I, in 1996 the International Court of Justice identified as customary one element of the general prohibition on indiscriminate attacks. The Court stated that a cardinal rule of IHL is that “States must never make civilians the object of attack and must consequently never use weapons that are incapable of distinguishing between civilian and military targets.”¶ That was a central basis for the Court’s conclusion that the use of nuclear weapons is “generally” contrary to international law.** States possessing nuclear weapons have subsequently accepted neither the Court’s formulation of the rule or its conclusion of “general” illegality.

The outcome of this exercise is that several states possessing nuclear weapons have claimed an exemption with respect to those weapons from important rules set forth in a major IHL instrument, Protocol I. Further, several states possessing nuclear weapons have not become parties to Protocol I, India, Pakistan, Israel, and the United States (the latter signed but has not ratified the instrument). At least for the United States, the desire to shield its reliance on nuclear weapons from the application of IHL has played a role in the failure to ratify; the perception seems to be that understandings and reservations may not suffice for this purpose.

Nuclear weapons continued to distort international law when the Rome Statute was

* Article 51(5)(b).

† Article 51(6).

‡ Article 35(3).

§ Nuclear Weapons Advisory Opinion, ¶ 84.

¶ Nuclear Weapons Advisory Opinion, ¶ 78.

** Nuclear Weapons Advisory Opinion, ¶ 105(2)E.

negotiated. The Statute provides that use of certain weapons, poison, poisonous gases and analogous materials, and expanding bullets, is per se a war crime. There was a very good case for inclusion as well of biological and chemical weapons. The Statute was negotiated on the basis that it reflects customary international law, and widely ratified conventions prohibit use and possession of those weapons. It is true that chemical weapons, and arguably biological weapons, are captured by the reference to poisonous gases and analogous materials, which is based on the 1925 Geneva Gas protocol. However, the Non-Aligned Movement states did not want to see biological and chemical weapons expressly included if nuclear weapons were not, and the nuclear-dependent countries of course absolutely refused to include nuclear weapons. So now, absurdly, use of poison, poisonous gases, and expanding bullets is a war crime, but not nuclear weapons, and not clearly biological and chemical weapons!

“Absurdly, use of poison, poisonous gases, and expanding bullets is a war crime, but not nuclear weapons, and not clearly biological and chemical weapons!”

The failure to specifically name nuclear weapons in the Rome Statute does not mean the Statute is inapplicable to use of those weapons. Under the general definitions of war crimes, crimes against humanity, and genocide, typical uses of nuclear weapons would be international crimes for which responsible individuals could be prosecuted assuming jurisdiction can be established. In view of this, France purported upon ratification to say that the Statute does not apply to nuclear weapons.⁷ That is a wholly implausible position. Also on ratification, the UK attempted to apply understandings it claimed, as discussed above, with respect to Protocol I.⁸ Other states possessing nuclear weapons have not become parties to the Rome Statute: Russia, China, India, Pakistan, United States, Israel, and North Korea. There are multiple reasons why these states, so reliant upon the potential use of military power, are cautious about the Rome Statute. But it seems likely that one of them is the incompatibility of the Statute with the use of nuclear weapons.

From the standpoint of most states and international lawyers, the nuclear powers' efforts to exempt and shield nuclear weapons from the application of IHL and international criminal law generally do not withstand scrutiny. Still, the efforts weaken the application of law to nuclear weapons, certainly *within* states possessing nuclear arsenals and their allies. The integrity of international law is also undermined; fundamental legal rules are supposed to apply to all states equally. When combined with the two-tier systems of the Nuclear Non-Proliferation Treaty and the Security Council, in each of which the Permanent Five have privileged positions, the overall effect of some states' possession of nuclear weapons and their defense of that possession against the demands of law is highly deleterious to the legitimacy and effectiveness of both international law and institutions.

2. The Contribution of International Law and Institutions to Establishment of a World Free of Nuclear Weapons

There are two sides to any relationship, and it is worth briefly considering how international law and institutions erode reliance on nuclear weapons and facilitate a transition to a nuclear-weapons-free world.

"If states have a responsibility to protect their own populations from atrocities, why should they be able to commit or threaten to commit atrocities against the populations of other states?"

One well understood point is that as the regime of prohibition and verified elimination of chemical weapons operates and endures, an example is set for nuclear disarmament.* And the bans, though far from universal, on cluster munitions and landmines pose the question, why not nuclear weapons?

It is also the case that there is a deepening awareness of the inherent incompatibility of reliance on nuclear weapons with an ever more entrenched normative framework stressing states' responsibilities to protect their populations against atrocities and to comply with international humanitarian law, the Rome Statute, human rights law, and the UN Charter. If states have a responsibility to protect their own populations from atrocities, why should they be able to commit or threaten to commit atrocities against the populations of other states? The Red Cross has played an important recent role in focusing normative attention on nuclear weapons and calling for their abolition, especially through an April 2010 speech by the ICRC President, Jacob Kallenberg,⁹ and a November 2011 resolution of the Red Cross/Red Crescent Movement.

Though its documents are adopted on a consensus basis and thus subject to approval by nuclear weapon states, the critique has now penetrated the NPT review process. In May 2010, the five-year NPT Review Conference for the first time expressed "deep concern at the catastrophic humanitarian consequences of any use of nuclear weapons" and reaffirmed "the need for all states at all times to comply with applicable international law, including international humanitarian law."

The NPT declaration reflects the increasing solidification of IHL at both the national and international levels. In the course of examining the application of IHL to nuclear weapons, the International Court of Justice referred to the decision of the Nuremberg International Military Tribunal.[†] That tribunal famously observed, "the very essence of the [Nuremberg] Charter is that individuals have international duties which transcend the national obligations of obedience imposed by the individual state."[‡] Since the ICJ opinion, the principle of individual responsibility has been definitively embedded in international law by the Rome Statute. IHL is also becoming more and more integrated into military operations and training, in the United States and elsewhere.¹⁰

The content of IHL has also developed since the negotiation of Protocol I and the ICJ opinion. It has now been more than three decades since Protocol I was negotiated; it now

* The Model Nuclear Weapons Convention circulated by UN Secretary-General Ban Ki-moon in 2008 to UN member states is largely based on the Chemical Weapons Convention approach. It can be found at http://inesap.org/sites/default/files/inesap_old/mNWC_2007_Unversion_English_N0821377.pdf. The model convention was developed by the International Association of Lawyers Against Nuclear Arms (IALANA), the International Physicians for the Prevention of Nuclear War, and the International Network of Engineers and Scientists Against Proliferation. The Secretary-General is on record as saying that it is a "good starting point" for negotiations. UN Secretary-General address, "The United Nations and Security in a Nuclear-Weapon-Free World," October 24, 2008, East-West Institute conference, "Seizing the Moment," United Nations. <http://www.un.org/News/Press/docs/2008/sgsm11881.doc.htm>

For an argument that there is a legal obligation under the Nuclear Non-Proliferation Treaty and other international law to commence multilateral negotiations on a nuclear weapons convention, see IALANA and International Human Rights Clinic at Harvard Law School, *Good Faith Negotiations Leading to the Total Elimination of Nuclear Weapons: Request for an Advisory Opinion from the International Court of Justice* (2009). <http://lcnep.org/disarmament/2009.07.ICJbooklet.pdf> In that publication, the two organizations propose that the General Assembly request an advisory opinion from the ICJ on the legal requirements for compliance with the nuclear disarmament obligation.

† Nuclear Weapons Advisory Opinion, ¶ 80.

‡ *Judgment of 1 October 1946, in The Trial of German Major War Criminals: Proceedings of the International Military Tribunal sitting at Nuremberg, Germany, Part 22 (22 August 1946 to 1 October 1946): 447.*

has 172 parties. Rules it set forth, if not customary at the time, could have become so in view of state practice since then. In a major 2005 study, *Customary International Humanitarian Law*, the ICRC found the following rule, drawn from Protocol I, to be customary: the prohibition of attacks “of a nature to strike military objectives and civilians or civilian objects without distinction,” including those “which employ a method or means of combat the effects of which cannot be limited as required by international humanitarian law.”¹¹ While it is known as the guardian of IHL, the ICRC does not have the last word. Nonetheless, while nuclear powers could dispute the customary status of that and other specific rules prohibiting indiscriminate attacks at the time Protocol I was negotiated or when the ICJ opinion was released, that stance increasingly loses credibility.

The ICJ did not pass upon the customary status of the Protocol I prohibition of causing widespread, severe, and long-term damage to the environment, and the United States and United Kingdom when Protocol I was negotiated considered it a “new” rule not applicable to nuclear weapons. But the ICRC study found that this rule has become customary in nature in view of state practice, including US statements in non-nuclear contexts.¹² The ICJ also did not squarely address the lawfulness of reprisals. Here the ICRC study finds that in view of state adherence to Protocol I and other treaties, other state practice, and decisions of the International Tribunal for the Former Yugoslavia citing the imperatives of conscience and humanity, “there appears, at a minimum, to exist a trend” toward acknowledgement of the customary nature of the Protocol I prohibition of reprisals against civilians.¹³

The Vancouver Declaration, “Law’s Imperative for the Urgent Achievement of a Nuclear-Weapon-Free World,” draws on these developments in articulating the current application of IHL to nuclear weapons.¹⁴ Initiated by civil society and released in 2011, it was endorsed by many eminent international lawyers as well as leading former diplomats and officials.* It states that due to their uncontrollable effects nuclear weapons cannot be used in compliance with the above-mentioned and other rules protecting civilians, neutral states, and the environment against the effects of warfare. Regarding reprisals, it makes the judgment that law can now join with conscience to condemn them, stating:

Use of nuclear weapons in response to a prior nuclear attack cannot be justified as a reprisal. The immunity of non-combatants to attack in all circumstances is codified in widely ratified Geneva treaty law and in the Rome Statute of the International Criminal Court, which provides inter alia that an attack directed against a civilian population is a crime against humanity.

IHL is rooted in what the ICJ called “elementary considerations of humanity,”† and its rules apply to all states. It therefore is a solid foundation for the emerging norm of non-use of nuclear weapons‡ and for building a legal framework for a nuclear-weapons-free world that is universal in its approach. While foreclosure of rebuilding nuclear weapons could not be gua-

* The declaration was developed by the International Association of Lawyers Against Nuclear Arms and The Simons Foundation with the input of a conference held in Vancouver with the participation of international lawyers, ICRC representatives, and representatives of Austria, Switzerland, and Norway. A full list of signatories is available at <http://www.lcnep.org/wcourt/Feb2011VancouverConference/signatories32211.pdf>. The author was one of the drafters.

† Nuclear Weapons Advisory Opinion, ¶ 79.

‡ Under the Obama administration, the United States is at least rhetorically contributing to establishment of a norm of non-use. The 2010 US Nuclear Posture Review Report states (p. ix): “It is in the U.S. interest and that of all other nations that the nearly 65-year record of nuclear non-use be extended forever.” That statement was reinforced later in 2010 when President Obama and Prime Minister Singh jointly stated their support for “strengthening the six decade-old international norm of non-use of nuclear weapons.” Joint Statement by President Obama and Prime Minister Singh of India, November 19, 2010. <http://www.whitehouse.gov/the-press-office/2010/11/08/joint-statement-president-obama-and-prime-minister-singh-india>

ranted until norms and institutions had become irreversibly established, such a world will have the great advantage of eliminating the terrifying risks posed by the current and ongoing deployment of nuclear forces. With one rule of non-possession for all, it will also be far more conducive than our present world of nuclear haves and have-nots to the development of a just and legitimate system of international law and institutions, which in turn will reinforce the durability of abolition of nuclear weapons.

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Notes

1. "Verbatim Record of Proceedings Before the International Court of Justice," *International Court of Justice* 9 November 1995, pp. 56-63. <http://www.icj-cij.org/docket/files/95/5937.pdf>
2. Peter Weiss and John Burroughs, "Weapons of mass destruction and human rights," *Disarmament Forum* no. 3 (2004): 26-28 <http://www.unidir.org/pdf/articles/pdf-art2139.pdf>
3. See "Bringing the era of nuclear weapons to an end," Statement of Jacob Kallenberg, President of the International Committee of the Red Cross, Geneva, April 20, 2010 (hereafter Kallenberg Statement). <http://www.icrc.org/web/eng/siteeng0.nsf/html/nuclear-weapons-statement-200410>
4. Quoted in Michael Bothe, Karl Josef Partsch and Waldemar A. Solf, *New Rules for Victims of Armed Conflict: Commentary on the Two 1977 Protocols Additional to the Geneva Conventions of 1949* (Leiden: Martinus Nijhoff Publishers, 1982), 275.
5. See Julie Gaudreau, "The reservations to the Protocols additional to the Geneva Conventions for the protection of war victims," *International Review of the Red Cross* no. 849 (2003): 11-13.
6. *Id.*
7. United Nations Treaty Collection, Chapter XVIII, Penal Matters, 10. Rome Statute of the International Criminal Court. http://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XVIII-10&chapter=18&lang=en
8. *Id.*
9. Kallenberg Statement: "Working towards the elimination of nuclear weapons," *Council of Delegates of the International Red Cross and Red Crescent Movement* November 26, 2011, Resolution 1. <http://www.icrc.org/eng/resources/documents/resolution/council-delegates-resolution-1-2011.htm>
10. See remarks of Professor Gary Solis in Lawyers Committee on Nuclear Policy and Global Security Institute, "Nuclear Weapons and International Humanitarian Law," report and transcript of a program of the Spring Meeting of the *International Law Section of the American Bar Association*, April 20, 2012, New York City: 13-16. <http://lcnp.org/pubs/ABA-2012.pdf>
11. Jean-Marie Henckaerts and Louise Doswald-Beck, International Committee of the Red Cross, *Customary Humanitarian International Law Vol. I* (Cambridge: Cambridge University Press, 2009), 40. <http://www.icrc.org/eng/resources/documents/publication/pcustom.htm>
12. *Id.* at 151-155.
13. *Id.* at 520-523; quotation at 523. See also Charles J. Moxley, Jr., John Burroughs, and Jonathan Granoff, "Nuclear Weapons and Compliance with International Humanitarian Law and the Nuclear Non-Proliferation Treaty," *Fordham International Law Journal* 34, no. 4 (2011): 661-667. <http://lcnp.org/wcourt/Fordhamfinaljoint.pdf>
14. See <http://www.lcnp.org/wcourt/Feb2011VancouverConference/vancouverdeclaration.pdf> For commentary, see John Burroughs, "The Vancouver Declaration and the Humanitarian Imperative for Nuclear Disarmament" *Nuclear Abolition Forum* no. 1 (2011): 1-6 <http://www.abolitionforum.org/site/wp-content/uploads/2012/01/NAF-First-issue.online-version.pdf>

Re-examining the 1996 ICJ Advisory Opinion: Concerning the Legality of Nuclear Weapons

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Abstract

The primary objections raised against total elimination of nuclear weapons are built around a few arguments mostly of non-technical nature.

Nuclear weapons and the strategies for their use have resulted in the establishment of a vicious circle within which the international community is trapped.

The argument that the world will be unsafe without nuclear weapons is only meant to further the narrow self-interest of the nuclear weapon states and their allies.

The World Court's far-reaching 1996 advisory opinion concluded that almost any use or threat of use of nuclear weapons would violate international humanitarian law and law applicable in armed conflict, undermining most claims of nuclear weapon states regarding the legitimacy of possession, use or threat of use of nuclear weapons. The next logical step would be an initiative for a nuclear convention banning the use and threat of use of nuclear weapons in Asia and the adjoining oceans. But as long as the dominant elites in society and the nation-state believe in the utility of nuclear weapons for national security or as the currency of power, abolition of nuclear weapons will remain a mirage.

Although in recent years President Obama and some of the leading Cold Warriors have taken up the cause of nuclear disarmament, we must clarify two points: (i) that disarmament means different things to different people, and (ii) the sudden affection for nuclear disarmament appears to have been a ruse in order to present a rosy picture at the NPT Review Conference in May 2010. Actually, no progress had been made in the previous ten years to move toward inalienable commitments given during the Review conference in 2000. The primary objections raised against total elimination of nuclear weapons are built around a few arguments mostly of non-technical nature. *Cold War, for example, used to be cited as a justification for nuclear weapons*, but it has been more than two decades since the Cold War ended. On the other hand, nuclear weapons are justified and retained by the nuclear weapon states on the grounds that *there is no Cold War now* and uncertainty caused by this factor is sought to justify retaining them!

The problem is that nuclear weapons and the strategies for their use have resulted in the establishment of a vicious circle within which the international community is trapped. This

has been appropriately summed up by William Arkin in the following terms:¹

What are the targets of nuclear weapons?

– *Nuclear weapons.*

What provocation could bring about the use of nuclear weapons?

– *Nuclear weapons.*

What is the defence against nuclear weapons?

– *Nuclear weapons.*

How do we prevent the use of nuclear weapons?

– *By threatening to use Nuclear weapons.*

Why can't nuclear weapons be abolished?

– *Nuclear weapons.*

To this can be added one more question: what is the strongest incentive to nuclear proliferation?

– *Nuclear weapons.*

Four years after the end of the Cold War in 1993, the CSIS Nuclear Strategy Study Group (in USA) had concluded that “there is no consensus, nor any immediate prospect of one, that total and complete disarmament will under any circumstances, be a feasible proposition”.² The report, however, went on to state that “it would be a tragedy if the present momentum toward international co-operation and disarmament passed without some attempt to establish a more robust nuclear end-state whose practical effect is virtually to eliminate the risk that nuclear weapons will be used”. The permanent extension of the NPT (Non-Proliferation Treaty) in May 1995 without any unambiguous, leave alone binding, commitment to nuclear disarmament only reinforced the concerns that nuclear disarmament was not likely to be pursued by the weapon states in any meaningful way in the foreseeable future.

“The argument that the world will be unsafe without nuclear weapons is only meant to further the narrow self-interest of the nuclear weapon states and their allies.”

On the other hand, some new voices also emerged since then to join the international community in demanding total elimination of nuclear weapons. China, unlike Russia, still supports the elimination of nuclear weapons, and has been seeking a no-first-use treaty among the weapon states. The argument that the world will be unsafe without nuclear weapons is only meant to further the narrow self-interest of the nuclear weapon states and their allies. Competent people like former US defence secretary and senior military commanders in the report of the committee chaired by General Andrew Goodpaster have already argued that *US security will be enhanced* with total elimination of nuclear weapons.³ They have recommended a phased programme of disarmament that could be achieved in a couple of decades. Australian Prime Minister Mr. Paul Keating, while announcing the setting up of the Canberra Commission of experts to work out a plan for total elimination of nuclear weapons, had

stated that, “I believe that a world free of nuclear weapons is now feasible.”* He went on to say that, “We want the nuclear weapon states to carry out their commitments to the elimination of their nuclear stockpiles by adopting a systematic process to achieve that result.”

Perhaps the most significant step to devalue and eliminate nuclear weapons was the referral by the UN General Assembly to the International Court of Justice at The Hague. As the Cold War ended, non-governmental organisations, especially the prestigious IPPNW (International Physicians for the Prevention of Nuclear War) and IALANA (International Association of Lawyers Against Nuclear Arms), proposed on 3rd September, 1993[†] that the World Health Organisation (WHO) Assembly seek from the International Court of Justice (ICJ, Generally referred to as the World Court) an advisory opinion on the question:

“In view of the health and environmental effects, would the use of nuclear weapons by a state in war or other armed conflict be a breach of its obligations under international law including the WHO Constitution?”

The ICJ considered WHO’s request and sought written submissions. After considering the case, the Court refused to give any advisory opinion on the WHO question on the grounds that the question did not fall within the scope of WHO’s activities as is required by Article 96(2) of the UN Charter.[‡] Meanwhile, the UN General Assembly adopted a resolution A/RES/49/75K on 15th December, 1994 (by 78 states voting in favour, 43 against, 38 abstaining and 26 not voting) which asked the ICJ to render its advisory opinion urgently on the following question:[§]

“Is the threat or use of nuclear weapons in any circumstances permitted under international law?”

While the resolution was instigated by NAM (Non-Aligned Movement), as may be seen, the voting pattern did not reflect a cohesive NAM position and actually showed the post-Cold War international order and perceived national interests of various countries. Of the five acknowledged nuclear weapons states, only China did not participate in the voting. The Resolution was submitted to the Court on 18th December, 1994. A total of 42 states (including India) provided written submissions to the Court and participated in the proceedings. Twenty states participated in oral hearings which were held during October-November 1995. The ICJ ultimately rendered its opinion on 8th July, 1996. The 15 judges of the ICJ decided that the Court was not able to give an advisory opinion requested by WHO. The reason rested on the fact that questions of use of force etc. were beyond the scope of specialised agencies like the WHO and hence, the Court confined its opinion to the UN General Assembly request.

The Opinion of the ICJ may be summarised as follows:

1. The threat or use of nuclear weapons is generally contrary to International Humanitarian Law (Opinion, para 105D). There are no international agreements banning them as nuclear weapons. However, the Court confirmed unanimously that their threat or use, just like other weapons, must comply with International Humanitarian Law and

*Speech given by P.J. Keating, Prime Minister of Australia on the 50th Anniversary of the United Nations, October 24, 1995.

[†]“ICJ Press Release on the Legality of the Use by a State of Nuclear Weapons in Armed Conflict” General List No. 93 (1993-1996).

[‡]ICJ Press release on the Legality of the threat or use of nuclear weapons – ICJ Advisory Opinion, 8th July, 1996. ICJ General List No. 93.

[§]General Assembly Resolution 49/75 K, Request for an advisory opinion from the International Court of Justice on the legality of the threat or use of nuclear weapons.

be judged according to their effects and the circumstance of their use (Opinion, para 86, 105, 2D). Weapons which do not distinguish between civilian and military targets would be unlawful.

2. To threaten anything illegal is itself illegal (Opinion, para 47). Possession and deployment of a weapon with the stated intention of its use under certain circumstances would constitute an illegal threat if the purpose of its use would inevitably violate the principles of necessity and proportionality (Opinion, para 48).
3. Proportionality includes the requirement that even if a nuclear response were proportionate to a threat or attack, it would still have to meet the requirement of humanitarian law (Opinion, para 42).
4. The Court said that “the use of such (nuclear) weapons is in fact scarcely reconcilable with respect for such requirement” (Opinion para 95) and noted that no state making submissions to the Court provided a plausible scenario in which the use of nuclear weapons would be lawful (Opinion, para 94).
5. The Court could not decide whether threat or use of nuclear weapons by a state would be lawful if its “very survival would be at stake” (Opinion para 97) because it did not have sufficient detailed information before it abutted the precise circumstances of such an event (Opinion, para 95), but the President of the Court said that this “*cannot in any way be interpreted as a half-open door to the recognition of the legality of the threat or use of nuclear weapons*” (Judge Bedjaoui, Separate Statement, para 11).
6. The restrictions imposed by the International Humanitarian Law are intransgressible. This means that it applies in all circumstances, even if the very survival of a state would be at stake (Opinion, para 79).
7. The Court unanimously decided that **“there exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspect under strict and effective international control”** (Opinion, para 105F).

The World Court has relied heavily on humanitarian laws and conventions in coming to its conclusions. This is as it should be. But the international community has been prompt in ignoring this linkage. As it is, an international community that places a heavy emphasis on humanitarian issues and the rule of law must act to remove the basic lacunae in its approach to nuclear weapons. For example, numerous conventions and agreements have come into being to ban even conventional weapons which lead to serious debilitating effects and violate the dignity and life of people.

While the World Court judgement does not go far enough for all those seeking elimination of nuclear weapons, it, nevertheless, contains far-reaching conclusions. Firstly, the Court has unanimously ruled that “*there is in neither customary nor conventional international law any specific authorization of the threat and use of nuclear weapons*”. This is an important opinion which naturally requires legislating an appropriate law. It is ironic — or rather tragic — that the international community has obtained a convention to outlaw landmines but seems to be unwilling to move toward a similar convention governing nuclear weapons which would, at the very minimum, create norms and inhibitions against the use of nuclear

weapons. The ruling also clearly knocks down the claim of nuclear weapon states that their possession and use or threat of use of such weapons are legitimate. It is obvious that such claims by nuclear weapon states are a reflection only of a cynical exercise of power rather than any regard for such norms. At the same time, in an 11:3 judgement it also ruled that there is no “comprehensive and universal prohibition of the threat and use of nuclear weapons as such” in international law. The UN General Assembly should have forecast this ruling. For an action to be declared as illegal, it is obvious that there must be a law, customary or statutory, which prohibits such actions. Use of poison was considered illegal for a long time, and a specific prohibition against its use was instituted by the international community through the 1925 Geneva Convention.

The World Court, in a 7:7 vote with the President casting the deciding vote, also ruled that “the threat and use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict, and in particular the principles and rules of humanitarian law”. At the same time, the Court ruled that “in view of the current state of international law”, (essentially the absence of specific law) the Court “cannot conclude definitely whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defence, in which the very survival of a State would be at stake”. This raises two issues. First, there is an over-riding necessity of a global convention to ban the threat and use of nuclear weapons. Second, since all nuclear weapon states are unlikely to agree to such a convention, (for example, the United States joined the 1925 Geneva Convention banning the use of chemical weapons only in 1975) states could be authorised to keep their weapons and their use could be clearly circumscribed in the case of self defence when the survival of the state is threatened by nuclear weapons.

The World Court judgement, read in its totality, clearly emphasises the need for properly framed and instituted laws to prohibit the use and threat of nuclear weapons. One can argue that nuclear weapons, even when present in quantities exceeding 65,000 warheads at one time, have not been used since the atomic bombings of Hiroshima and Nagasaki in 1945. One can argue that non-use has become the norm over the past seven decades. But, while this norm needs to be made more permanent, non-use would give a false sense of success since it hides the reality of nuclear threats being held out and readiness levels being enhanced in over 56 crises since 1946. Any one of them could well have resulted in actual use of nuclear weapons. The Cuban missile crisis was an important benchmark in highlighting how close the world came to extensive use of large arsenals of the superpowers. There are also numerous instances when accidental use was stopped just in time. It is debatable whether we rely on the norm of seven decades of non-use as a valid substitute for legal framework to control the threat and use of nuclear weapons.

Nuclear weapon states and their allies relying on such weapons may be expected to oppose the institution of such legal norms and laws as their submissions at the World Court also indicated. But they are increasingly being forced to accept through protocols, a prohibition to use or threat of use of nuclear weapons in an enlarging portion of the globe falling within nuclear-weapon-free zones. At the same time it is necessary to recall that an overwhelming majority of states have been voting for a convention to outlaw the threat and use of nuclear weapons. India had been in the forefront of moving such a resolution at the UN year after year since 1978. In fact, it is most unfortunate that support for such a resolution declined after the

end of the Cold War. As long as nuclear weapons remain and are seen as legitimate, India will continue to face the dilemma of working to achieve global zero while keeping its option open and retaining its weapons for self-defence. The logical step required is to resurrect this resolution at the forthcoming session of the UN General Assembly and generate maximum support for it. Meanwhile, since most of the Asian countries have supported the concept so far, they should take the initiative for a nuclear convention banning the use and threat of use of nuclear weapons in Asia and the adjoining oceans.

“As long as the dominant elites in society and the nation-state believe in the utility of nuclear weapons for national security or as the currency of power, abolition of nuclear weapons would remain a mirage.”

Creating a Legal Norm

Even a brief study of human history would clearly indicate that all major changes affecting human behaviour have come about on the basis of change in ideas and belief systems prevalent at that point in history. The easiest example that comes to mind is the abolition of slavery. There is no doubt that a civil war became the vehicle of that change. But other changes like the demise of apartheid in South Africa or untouchability in India came about through changes in prevailing beliefs and ideas, no doubt propelled by humanitarian statesmen. Unfortunately, most attempts and draft conventions to eliminate nuclear weapons ignore this crucial element. As long as the dominant elites in society and the nation-state believe in the utility of nuclear weapons for national security or as the currency of power, abolition of nuclear weapons would remain a mirage. No amount of extremely well argued and apparently unbeatable draft proposals stands any chance of success as long as the dominant ideas actually perceive an advantage whether for deterrence of other countries or compellence or even simply because others have it and hence hope to change their relative place in international hierarchy.

The above conclusions are based on the simple but horrifying reality that nuclear weapons possess enormously high levels of extremely lethal and destructive power. Link that with the stark fact that the modern world, in spite of exponential advances in technology, has not been able to find any credible defence against such weapons. These two factors provide nuclear weapons with the power unmatched by any other weapon. Some people may point to the development and deployment of BMD (Ballistic Missile Defence). But that would be ignoring what is obvious: that BMD may provide defence against incoming missiles, the delivery system for nuclear weapons, but it leaves out other means and methods of delivering nuclear weapons.

Doctrinal changes in the use and utility of nuclear weapons are another aspect of the process of de-legitimation. There is an urgent need for a binding political agreement among the eight declared/undeclared nuclear weapon states (five weapon states, and India, Pakistan and Israel) not to be the first to use nuclear weapons/capabilities. Of these, China and India have always supported the concept of no-first-use pledge. The Soviet Union used to support the concept also, but the Russian Federation has moved away from that position. However, it is not an absolutist shift. In late 1990s, Russia and China agreed to a bilateral no-first-use (of nuclear weapons) commitment within a broader non-aggression pact. In a profound change

from its earlier position, NATO adopted the position in July 1990 that nuclear weapons were “truly weapons of last resort.” It is significant that even in Pakistan, which used to thump its chest and threaten using the nuclear weapons first and at an early stage in an armed conflict, some of the leading thinkers began to argue within two years in favour of a doctrine of “first, in last resort.”⁴ The new Strategic Concept adopted by NATO in November 1991 further relegated nuclear weapons to margins of NATO strategy by stating that the “circumstances in which any use of nuclear weapons might have to be contemplated” are “remote”.⁵

“Nuclear weapons must be totally eliminated from national arsenals.”

The new NATO-Russia Founding Act signed at Paris on May 27, 1997, states that “Russia and NATO do not see each other as adversaries”. President Clinton, speaking about the Charter stated that “The veil of hostility between East and West has lifted. Together we see a future of partnership too long delayed that must no longer be denied.” President Chirac of France and Chancellor Kohl of Germany endorsed these views. As early as 1993, a seminal study by eminent experts in USA concluded that “The changing political landscape in Europe has produced a strategic revolution; neither deterrence of conventional attack nor deterrence of nuclear attack any longer requires the presence of large numbers of ... nuclear weapons on the European continent.”⁶ The forecast of changes in the geo-political landscape, if anything, has been more profound and extensive than that visualised by the CSIS study. There is every reason to expect, therefore, that NATO would move at an early date from its current “last resort” position.

In the view of many experts, the current NATO position is well short of a no-first-use commitment. But if more recent developments are any indication, there is no reason why the NATO states would/should not go to fuller commitment to no-first-use at an early date. The most important development is the agreement between NATO and Russia regarding NATO expansion where, in fact, President Yeltsin made the surprise announcement that Russian nuclear weapons have been taken off their earlier mission of targeting NATO member countries. But difficulties may also arise from Israel and Pakistan not coming forth with such commitments. In that case, the agreement could be concluded among the five declared nuclear weapon states and India, while Israel and Pakistan could be invited to join at the earliest opportunity.

Two aspects need consideration: one concerns the “no-first-use” concept and commitment, and the other relates to the principle of proportionality, even in circumstances where the Court has been undecided, that is, in self-defence under specific circumstances related to the survival of the State. The first should be seen in the context of the Court’s opinion that there is no specific law either authorising or prohibiting use and threat of nuclear weapons. Till the issue of such a law is settled, use and threat of nuclear weapons would continue to be generally inconsistent with law. This should place an obligation on all countries to adapt nuclear doctrines now in consonance with the World Court ruling. There can be no reasonable situation where threat of use of nuclear weapons would be justified for self-defence. But such a threat exists in the very possession of nuclear weapons themselves. The implication, therefore, is that nuclear weapons must be totally eliminated from national arsenals.

Although the Court has not specified the particular circumstances under which threat and use of nuclear weapons might be justifiable when the very survival of the State is in question, the principle of proportionality would require that even under these circumstances, nuclear weapons can be considered legal only in extreme situations if the survival of the State is threatened by the nuclear weapons of other states. The effects of use of nuclear weapons extend beyond territorial limits of a state. The matter of use under extreme circumstances of protecting the survival of the State has to take this into account. The logic which has sought to justify possession and use of nuclear weapons against superior conventional forces, as by NATO for four decades and Pakistan in justifying its weapons programme, cannot remain valid in terms of the principle of proportionality. The final assurance of the survival of the state has to be provided by the international community, in particular by the UN, whose primary responsibility is to ensure international peace and security. At the same time, the World Court ruling has also made it clear that the definition, rights, and limits of action for self-defence will require elaboration and acceptance by the international community. The Secretary General should ensure movement toward this direction.

The Court has also ruled that the international community, especially the five nuclear weapon states, have not only an obligation to negotiate (in good faith) a treaty for total nuclear disarmament, but also have an obligation to conclude such a treaty. It may be recalled that in the run up to the permanent extension of the NPT, many experts and diplomats, in particular British, had been arguing that Article VI of the NPT imposes only an obligation to negotiate, but does not actually require conclusion of such a treaty! We may expect that the nuclear weapon states (and their allies under nuclear umbrellas) will cynically disregard the ruling of the World Court as they have been doing all along in their pursuit of nuclear hegemony. But the remaining 150 or so countries also bear a responsibility to keep nudging the recalcitrant states into implementing their commitments to disarm.

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Notes

1. William Arkin, "The bomb has many friends," *The Bulletin of Atomic Scientists* (1997): 37-39.
2. *Toward A Nuclear Peace: The future of nuclear weapons in US foreign and defense policy* (Washington D.C.: CSIS Nuclear Strategy Study Group Centre for Strategic and International Studies, 1993), 67.
3. *An Evolving US Nuclear Posture*, Second Report of the Steering Committee, Project on Eliminating Weapons of Mass Destruction (Washington D.C.: Henry L. Stimson Centre, 1995).
4. Agha Shahi, Zulfiqar Ali Khan and Abdul Sattar, "Securing Nuclear Peace," *The News International* October 5, 1999.
5. *Toward A Nuclear Peace*, CSIS Nuclear Strategy Study Group Report, 27.
6. *Toward A Nuclear Peace*, CSIS Nuclear Strategy Study Group Report, 28.

India's Disarmament Initiative 1988: Continuing Relevance, Valid Pointers for an NFWW

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Abstract

The run up to the NPT Review Conference in 2010 brought nuclear disarmament into focus. Transitory though this trend turned out to be, it nevertheless became a trigger for India to re-examine its own position on disarmament. In order to take a considered view on the subject, Prime Minister Manmohan Singh instituted an Informal Group in October 2010 with the specific mandate to examine the relevance of the Action Plan that had been presented by Rajiv Gandhi in 1988. Were there any specific elements of that plan that were worth pursuing in the new security environment? What role could and should India play as a state with nuclear weapons in the pursuit of disarmament? Should India make the drive towards universal nuclear disarmament a priority in its diplomatic initiatives? Did India have the moral standing to do so after she herself had acquired the weapon? Has anything changed in the international climate to suggest that the Indian lead would attract like-minded nations? How should India approach other nations on this issue? These were some of the questions that the Informal Group considered before presenting its report to the Prime Minister in August 2011. It firmly conveyed the conviction that "India can and must play an effective and credible role as the leader of a campaign for the goal of universal nuclear disarmament, both because India can bring to the campaign its moral strength deriving from six decades of consistently campaigning for nuclear disarmament but also now the weight of its growing presence in the international system."

For six and a half long decades now India has been at the forefront of efforts for universal nuclear disarmament. During this period, it has introduced many resolutions — some uninterruptedly for at least three decades — at the United Nations General Assembly, and presented possible steps to get to disarmament. The most comprehensive of these was the Action Plan for a Nuclear-Weapon-Free and Non-violent World Order presented in 1988 by the then Indian Prime Minister Rajiv Gandhi to the Third Special Session on Disarmament of the UNGA. The idea however proved to be ahead of its time and did not receive the attention it deserved from the international community.

A decade later, as India found herself compelled to develop a nuclear arsenal to cater to the nuclear threat environment in her neighbourhood, the country's own focus on disarmament seemed to somewhat blur. This is not to suggest that India lost interest in a nuclear-weapons-free-world (NFWW). But that New Delhi was no longer driven to take the lead on this at the international level, nor treat it as a burning priority in its foreign policy. So, routine noises

continued to be made at international fora and resolutions that had been long presented in the United Nations General Assembly (UNGA) as a matter of habit continued to be tabled. But nothing of real significance emerged.

The situation did not change until 2006, when India submitted a Working Paper on nuclear disarmament in the First Committee of the UNGA and subsequently at the Conference on Disarmament to stimulate debate and promote consensus on the way forward. It listed seven practical measures to obtain the goal of a nuclear-weapons-free world, though the paper did not ascribe any rigid sequencing to their implementation. These included:

- Reaffirmation of the unequivocal commitment of all nuclear weapons states to the goal of complete elimination of nuclear weapons.
- Reduction of the salience of nuclear weapons in security doctrines.
- Adoption of measures by nuclear weapon states to reduce nuclear danger, including the risks of accidental use of nuclear weapons.
- Negotiation of a global agreement among nuclear weapon states on 'no first use' of nuclear weapons.
- Negotiation of a universal and legally binding agreement on non-use of nuclear weapons against non-nuclear weapon states.
- Negotiation of a convention on the complete prohibition of use or threat of use of nuclear weapons.
- Negotiation of a nuclear weapons convention prohibiting the development, production, stockpiling and use of nuclear weapons, and on their destruction, leading to the global, non-discriminatory and verifiable elimination of nuclear weapons with a specified time frame.

While this Working Paper did not receive much traction in the Conference on Disarmament (CD), deadlocked as it then was and has been since on the issue of the Fissile Material Cut-off Treaty, the overall subject of nuclear disarmament did appear to have become fashionable after the four American Cold Warriors, George Shultz, William Perry, Henry Kissinger, and Sam Nunn wrote two opinion pieces in the *Wall Street Journal* in 2007 and 2008 lending their voice to nuclear disarmament.^{1,2} This set into motion a spate of efforts at the governmental and non-governmental level with many new reports and road maps being drafted to achieve the elimination of nuclear weapons.* In fact, in the three years immediately preceding the NPT Review Conference in 2010, there was a near frenzy of writings and seminars on the desirability and feasibility of a world free of nuclear weapons. As expected, much of the noise subsided after May 2010.

This international focus on nuclear disarmament, transitory though it turned out to be, nevertheless became a trigger for India to re-examine its own position on disarmament. In order to take a considered view on the subject, Prime Minister Manmohan Singh instituted

*Some notable initiatives include the speech made by President Obama in Prague in April 2009 where he committed the US for the first time to the pursuit of nuclear disarmament; the Report entitled "Eliminating Nuclear Threats" prepared by the International Commission on Non-proliferation and Disarmament; the UK-Norway experiment on verifiable disarmament; and the many conferences organized by Global Zero.

an Informal Group* in October 2010 with the specific mandate to examine the relevance of the Action Plan that had been presented by Rajiv Gandhi in 1988. Were there any specific elements of that plan that were worth pursuing in the new security environment? What role could and should India play as a state with nuclear weapons in the pursuit of disarmament? Should India make the drive towards universal nuclear disarmament a priority in its diplomatic initiatives? Did India have the moral standing to do so after she herself acquired the weapon? Has anything changed in the international climate to suggest that the Indian lead would attract like-minded nations and gather a momentum? How should India approach other nations on this issue?

These were some of the questions that the Informal Group considered over many meetings, among themselves and with other experts on the subject. Finally, ten months after it had been instituted, the Informal Group presented its report to the Prime Minister in August 2011. It firmly conveyed the conviction that “*India can and must play an effective and credible role as the leader of a campaign for the goal of universal nuclear disarmament*, both because India can bring to the campaign its moral strength deriving from six decades of consistently campaigning for nuclear disarmament but also now the weight of its growing presence in the international system.”† Some of the major findings and recommendations of the report are summarised in the following sections.

1. Findings of the Informal Group

Contemporary nuclear challenges underscore the need for nuclear disarmament — The world today is grappling with the challenge of establishing strategic stability in a multi-nuclear world. This is not an easy proposition since multiple nuclear relations between two or more countries, each with its unique nature of deterrence, pose challenges not experienced during the bipolar nuclear world of the Cold War. To complicate matters further, the parameters of rationality of all the nuclear players cannot be expected to be the same. During the Cold War, the two superpowers had learnt to evolve a set of rules that brought a modicum of predictability and hence stability to the nuclear game. Some of the new nuclear players, however, believe in generating instability as a means of establishing deterrence. Therefore, as more countries join in, the complexities can only increase. And, in a crowded nuclear street, one can only hope that each has an equally effective control over its nuclear assets so as to minimise existential risks of inadvertent or unauthorised use of nuclear weapons.

At the same time, the non-state actor also threatens to gatecrash into the nuclear pen. Al Qaeda is well known for its desire to acquire nuclear weapons and if that were to happen, classical nuclear deterrence would not be able to avert the use of the weapon. In that unfortunate situation, the immediate physical damage that would result from such use would be equally matched by the breach of the psychological norm or taboo against the use of the nuclear weapon that is presently in place.

It was the realisation of this heightened risk from nuclear weapons that made President Obama begin to look at these weapons more as a liability than an asset. His personal com-

*The Group was instituted under the chairmanship of Mr. Mani Shankar Aiyar, honourable Member of Parliament. The members included Cmde Uday Bhaskar (later Adm Ramdas joined in his place), Amb Satish Chandra, Mr. Arvind Gupta, Amb Saurabh Kumar, Prof. Amitabh Mattoo, Dr. Manpreet Sethi, and Mr. Siddharth Varadarajan.

†Emphasis added. Full text of the report is available on the Indian Pugwash Society website.

mitment to the cause of nuclear elimination has already won him the Nobel Peace Prize, but unfortunately he has not yet been able to get his administration to take any meaningful steps in this direction. In case Obama returns to the White House in 2013, it could provide a window of opportunity to push some meaningful measures in this direction.

Changed Indian position strengthens her ability to push for disarmament —

As a state with nuclear weapons, India brings greater credibility to her call for the elimination of nuclear weapons. When the country made this case before 1998 when she did not have the weapons, it was dismissed as a case of sour grapes, where India did not have the weapon and did not want others to have it either. But as a nuclear-armed state, India brings to the table her commitment to remove these weapons from her own arsenal and this lends sincerity to her demand for disarmament.

India's case for NFWF is based on the logic of her national security — For India, the imperative of nuclear disarmament arises from the fact that the weapons with the adversaries pose a threat to the nation in more ways than one. Pakistan uses her nuclear weapons as a shield to carry out her policy of terrorism and thereby bleed India through a thousand cuts. The projection of a low nuclear threshold by Pakistan checkmates India's conventional military. Meanwhile, China's rapid nuclear modernisation carries the danger of subjecting India to nuclear blackmail or coercion, especially since the territorial disputes between the two are yet to be resolved. Though India's nuclear weapons do provide nuclear deterrence, the existential risks of an inadvertent nuclear exchange as a result of a miscalculation or an unauthorised launch cannot be ruled out. Therefore, India's security is best found in a situation where neither of her adversaries is armed with nuclear weapons. And this can only come about as a process of universal nuclear disarmament.

"Only if nuclear disarmament is either the result of or results in more cooperative and secure inter-state relations, will countries not feel the need to move towards building other weapons to compensate for the perceived loss of security."

Principles of the 1988 Action Plan Still Valid — The Action Plan presented by India in 1988 was premised on some basic principles that still remain valid for the realisation of an NFWF. Five of these can be identified — *Universality*, since in order to be viable and sustainable, nuclear disarmament must necessarily be equally applicable to all. Each country that has nuclear weapons or the capability to build them has to accept the obligation to eliminate its stockpile, while those that are non-nuclear have to commit themselves to remaining so; *Non-discrimination*, since uniformity of commitments to uniformly applicable verification procedures and a singular standard of compliance is critical; *Verifiability*, since only this

can promise transparency in the process to foster confidence amongst states to stick to their pledges. While it is true that the scope of verification measures may need to be different for possessors and non-possessors of nuclear weapons, both intrusiveness and stringency must be equal in principle, theory and practice; *Simultaneity of collateral measures traversing security issues other than nuclear*, such as confidence building in areas of conventional forces, international treaty on prohibition of weaponisation of outer space, or getting the United Nations to evolve by consensus a new strategic doctrine of non-provocative defence. Only if nuclear disarmament is either the result of or results in more cooperative and secure inter-state relations, will countries not feel the need to move towards building other weapons to compensate for the perceived loss of security; *Tolerance and acceptance*, since the new world order will have to be based on “respect for various ideologies, on the right to pursue different socio-economic systems, and the celebration of diversity.” *Cooperative security*, in place of the current competitive security, is needed to meet not only the requirement of nuclear disarmament but also the many challenges of the 21st century. An indication of this understanding can be found in the UN Security Council Resolution 1887, adopted on 24 September 2009 under the chairmanship of President Obama. It established a linkage between nuclear disarmament and the promotion of international stability, peace and security premised on “the principle of increased and undiminished security for all.”

Non-proliferation is not a substitute for disarmament — In fact, non-proliferation is not sustainable without disarmament. It is the failure to recognise the symbiotic relationship between the two that has created the biggest weakness for the non-proliferation regime. As long as the nuclear weapon states continue to retain their nuclear arsenals, it would be impossible to get the NNWS to remain committed to their promises of non-proliferation.

2. Recommendations of the Informal Group

Bring back the focus on universal nuclear disarmament at the national and international levels — For all the reasons cited in the above section, the report recommends that India should make all attempts to bring back and retain the focus on nuclear disarmament. The report suggests a need for efforts to be made at both the national and international levels to generate an awareness of the inherent dangers of nuclear weapons. In fact, the need for building a national consensus on the very issue of whether India should take the lead in pushing the world towards disarmament came out clearly when in August 2012 at a National Outreach Conference held in New Delhi which saw the participation of some 1200 students, many linked India’s nuclear weapons with national status and security and argued against India making any efforts to give them up. Therefore, it is clear that public awareness on the limited value of nuclear weapons for India’s security or status and the fact that they have rather complicated security challenges will have to be built. At the same time, efforts at the international level are also necessary to raise the public’s awareness of nuclear dangers since these pretty much disappeared with the end of the Cold War. Unless people everywhere become aware of the dangers palpably, they are unlikely to push their leaders to change policies. It was with this belief that the Group recommended a return of focus to the issue of nuclear disarmament.

Use strategic partnerships to push a bilateral dialogue on nuclear disarmament — Given that India has a strategic dialogue with nearly every major nation today, the report recom-

mends that the subject of disarmament be included in the bilateral agenda as part of the ongoing diplomatic discussions. This would help India get a sense of how much attention and priority other countries are willing to invest in the subject. Accordingly then, India could decide on the timing, manner and scope of multilateral engagement on nuclear weapons elimination. This approach was preferred to one where India could offer another proposal/road map at the UNGA or other multilateral forum, without testing the waters first. Unlike the situation in 1988, the current climate finds India better placed to approach the countries bilaterally and judge their reactions in order to anticipate probable hurdles to the exercise.

Build concentric circles of concurrence — Besides engaging bilaterally with nations, the report also urges India to use opportunities where they exist to build upon steps that might create the right conditions for nuclear disarmament. For example, the focus that the NPT Review Conference 2010, the Non-Aligned Movement and other groups like the New Agenda Coalition have brought to an issue like negative security assurances could be used to push the proposal for a treaty on the subject. It may be recalled that negotiation of a universal and legally binding agreement on non-use of nuclear weapons against non-nuclear weapon states is one of the seven steps that India had proposed in its Working Paper in 2006. Similar avenues of common ground could be found to build concentric circles of concurrence that might eventually enable the creation of an NWFW.

Undertake outreach conferences within India to explain the dangers of nuclear weapons and consequences of a nuclear exchange — It has been proved by scientific studies that any deliberate nuclear exchange even with low kiloton yields of the Hiroshima and Nagasaki variety will have repercussions that go beyond national and regional boundaries. During the height of the Cold War, an exchange between the US and USSR was calculated to cause a severe nuclear winter whose effects would have impacted the world. With the reduction in numbers, this fear might have dissipated a bit, but it has certainly not gone away. Rather, with the spread of nuclear weapons into more states, the dangers can only multiply.

But the public in India, Pakistan and China is insufficiently educated on the possible consequences of a nuclear conflict. None of the nations have brought out any official studies providing estimates of the likely deaths and destruction levels that a nuclear exchange could cause in areas as densely populated as these three countries are. The report, therefore, recommends that greater discussion and awareness on this dimension of the nuclear weapon would not only go towards enhancing deterrence but also prepare public opinion on nuclear disarmament.

“Efforts at moving towards a nuclear-weapons-free world must include measures that help to build a positive overall atmosphere. Hence the need for steps such as legally binding and universally applicable negative security assurances, universal no first use commitments, and a ban on the use or threat of use of nuclear weapons.”

Identify measures that set the stage for nuclear disarmament — Elimination of nuclear weapons cannot be conducted in isolation or alienated from some parallel collateral mea-

asures that must simultaneously seek to reshape the premise and architecture of international security. Efforts at moving towards a nuclear-weapons-free world must include measures that help to build a positive overall atmosphere. Hence the need for steps such as legally binding and universally applicable negative security assurances, universal no first use commitments, and a ban on the use or threat of use of nuclear weapons. Measures such as these would substantially alter threat perceptions and reduce the salience of nuclear weapons, thus creating the constructive framework within which countries will find it easier to enter into meaningful nuclear weapons elimination engagements and negotiations.

Settle for a Time-bound but Flexible Plan — The delineation of phases or the adoption of a time-bound approach for disarmament has evoked much controversy. In the Action Plan of 1988, India had recommended a three-stage time-bound plan to get to zero nuclear weapons. The first and second phases were to last 6 years each while the final phase was to last a decade. However, over the years, many countries, such as France and Russia, have opposed the creation of ‘artificial timelines’. But the problem with no schedule is that it could remain open-ended without creating tangible benchmarks of progress. So, it would be far more helpful if some consensually agreed upon phases for implementation of steps were evolved. The timelines could be negotiated to arrive at a broad consensus, but to have no deadlines for necessary actions would be akin to having a dead plan.

3. Conclusion

In 1988 Rajiv Gandhi had said:

*Humanity is at a crossroads. One road will take us like lemmings to our suicide. That is the path indicated by doctrines of nuclear deterrence, deriving from traditional concepts of the balance of power. The other road will give us another chance. That is the path signposted by the doctrine of peaceful coexistence, deriving from the imperative values of non-violence, tolerance and compassion.**

Humanity is still poised at the same juncture today. This is both a fortunate and an unfortunate reality. It is fortunate because mankind has not yet blown itself up in a nuclear holocaust and the numbers of nuclear weapons have progressively reduced. At the same time, it is also unfortunate that humanity has not progressed down the road to a nuclear-weapons-free world. So, while the numbers may have reduced from a peak of 70,000 to about 20,000 today, the dangers from nuclear weapons remain and have only grown in dimension and become more challenging.

We inhabit today a world where far more numbers of states have nuclear weapons; where even more could be tempted to cross the threshold, thereby leaving a large tear in the non-proliferation fabric; where non-state actors are powerful enough to pose threats to state security; where the possibility of non-state actors acquiring nuclear material or weapons for terrorism, either with or without state complicity has multiplied; where inter-state relations are mired in mutual mistrust; and where the possibility of a nuclear incident – terrorist-triggered or state-sponsored – occurring somewhere in the world poses a risk. President Obama stated at the Nuclear Security Summit in April 2010, “It is an irony that while the risks of a nuclear confrontation have come down, the risks of a nuclear attack have increased.”

*n.1, p. 141

With an increase in nuclear dangers, there must be a simultaneous progression in our understanding that the only sustainable route to mitigating these dangers has to pass through a nuclear-weapons-free world. And, such a world must be built on the pillars of certain principles that promise equal, cooperative security to all.

As a state with nuclear weapons, but one that has restricted the role of its nuclear weapons to deterrence alone, which has premised its arsenal on the pillars of credible nuclear deterrence, a no first use and non-use against non-nuclear weapon states, India is already demonstrating an example of nuclear restraint and living the steps that can move the world towards nuclear elimination.

As an economic power of considerable import, India today has the ear of major international players. This provides an opportunity to push issues that could address India's security concerns too and fortunately this is equally a global challenge that is beginning to be realized. It is in this backdrop that the Informal Group found merit in re-examining the initiative of 1988 whose robustness and validity remain despite the passage of time.

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Notes

1. George P. Shultz, William J. Perry, Henry A. Kissinger and Sam Nunn, "A World Free of Nuclear Weapons" *Wall Street Journal* January 4, 2007 <http://online.wsj.com/article/SB116787515251566636.html>
2. George P. Shultz, William J. Perry, Henry A. Kissinger and Sam Nunn, "Toward a Nuclear-Free World" *Wall Street Journal* January 15, 2008.

Nuclear Threats and Security

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Abstract

This article presents highlights and insights from the International Conference on "Nuclear Threats and Security" organized by the World Academy of Art and Science in association with the European Leadership Network and the Dag Hammarskjöld University College of International Relations and Diplomacy and sponsored by NATO at the Inter-University Centre, Dubrovnik on September 14-16, 2012. The conference examined important issues related to nuclear non-proliferation and disarmament, the legality of nuclear weapons and their use, illicit trade in nuclear materials, the dangers of nuclear terrorism, nuclear- and cyber-security. Papers and video recordings of the major presentations and session summaries can be found [here](#).

The opening presentations by representatives of WAAS, ELN, Pugwash, NATO and other participants sounded a common theme that reverberated throughout the conference — a shared conviction that urgent measures are needed to achieve a world without nuclear weapons. The complex international situation with respect to nuclear weapons is destabilizing and counter-productive. While nuclear weapons have virtually no conceivable military value, the status and prestige associated with their possession provide incentives for nuclear proliferation, especially by states concerned about the possibility of external intervention to bring about regime change. The prevailing nuclear paradigm subsists on the basis of deeply-seated, unsupportable misconceptions regarding the utility of nuclear weapons, their essential role in national security, their contribution to peace during the Cold War and the impossibility of eradicating them from existence. The conference strongly endorsed measures to promote objective examination and public education to remove numerous myths that undermine essential steps toward complete nuclear disarmament.

1. Nuclear Weapons in the Middle East

In recent months the drums of war have once again been beating in the Middle East. The build-up of political pressure, social unrest and open civil war in the Middle East combine to make the issue of Iran's nuclear program a dangerous knot in international relations today. The acquisition of nuclear weapons by Iran would be a major setback to peace in the Middle East and is likely to unleash further proliferation by other states. Iran has categorically denounced nuclear weapons and rejects accusations that it is trying to acquire them. However, recent disclosures by the International Atomic Energy Agency suggest that the

country is keeping its options open, although major intelligence agencies agree that Iran has made no decision to make a nuclear warhead.

Iran is a proud nation with an ancient history. Neither sanctions nor threats of physical intervention are likely to dissuade the country from exercising its legal right to develop nuclear energy under the NPT for peaceful purposes. Actual physical attack on Iran's nuclear facilities would undermine the legitimacy of the Nuclear Non-Proliferation Treaty and is likely to unleash catastrophic war in the Middle East. Positive efforts that provide a means for Iran to preserve or enhance its credibility rather than merely succumb to international pressure are far more likely to bear fruit. There is no viable alternative but to intensify efforts for mediation to enhance a peaceful resolution of this crisis.

"NATO and all nuclear weapon states must be urged to accept full responsibility for elimination of these weapons as soon as possible by adopting proactive policies and actions rather than imposing preconditions on other parties for progress on this issue so critical to the welfare of all humanity."

The creation of nuclear-weapon-free zones (NWFZs) represents an integral element in a comprehensive multi-lateral strategy for a nuclear-weapons-free world. The extension of nuclear-free zones to encompass 114 nations is a significant achievement, which can be enhanced by concerted efforts to create NWFZs in the Middle East, in the territory neighboring on the Arctic region, and elsewhere. Efforts to make the Middle East a Nuclear-Weapons-Free Zone are stymied by the high level of rhetoric and exchange of threats between Israel and Iran combined with Israel's insistence on its own right to possess a significant arsenal of nuclear weapons. This situation is too serious to be left to the foreign policy inclinations of neighboring states. The whole world has a critical stake in a peaceful resolution of tensions in the Middle East, including a complete removal of weapons of mass destruction from the region.

The Iranian problem focuses attention away from the more fundamental issue — the complete abolition of nuclear weapons from the face of the earth. NATO and all nuclear weapon states must be urged to accept full responsibility for elimination of these weapons as soon as possible by adopting proactive policies and actions rather than imposing preconditions on other parties for progress on this issue so critical to the welfare of all humanity.

2. Legality of Nuclear Weapons

At the heart of the conflict over Iran's nuclear program are the inherent inequity and hypocrisy on which the prevailing regime of non-proliferation is based. The 1996 advisory opinion of the International Court of Justice categorically affirmed the legal obligation of the nuclear weapon states to initiate and bring to a successful conclusion good faith negotiations leading to nuclear disarmament. This has not happened in spite of the conducive atmosphere that existed following the end of the Cold War. Indeed, 47 years after the signing of the NPT and 16 years since the ICJ's advisory opinion, none of the nuclear weapons states have abandoned reliance on this class of weapons. On the contrary, some signatories to the treaty have raised the salience of nuclear weapons in their defense strategies. Nuclear missiles remain on high alert in Russia and USA. China is still expanding its nuclear arsenal. In addition, at least three new nuclear weapon states have come into existence and there are immanent threats

of further proliferation. Countries such as Pakistan, India, Israel and North Korea continue to strengthen their nuclear weapons capability outside any framework of arms control. Although the practical value of missile defense systems is highly questionable, continued efforts to deploy them add unnecessary obstacles to the reduction of the nuclear threat. Concerted efforts are needed to establish the legal framework and practical basis for an arms control regime that covers all nuclear weapon states.

“The number of countries covered by nuclear-weapon-free zones has multiplied more than five-fold and now covers 115 nations, a clear indication of the will of the international community affirming the illegality of nuclear weapons.”

Circumstances are radically altered since the time of the ICJ’s advisory opinion, as detailed in Winston Nagan’s “Simulated ICJ Judgment”.¹ The continued insistence on and proliferation of nuclear weapon states is the most compelling argument for fresh action by the World Court. In addition, since 1996 many other countries of the world have weighed in to clearly state their abhorrence for these weapons. The number of countries covered by nuclear-weapon-free zones has multiplied more than five-fold and now covers 115 nations, a clear indication of the will of the international community affirming the illegality of nuclear weapons. Moreover, new insights have come to light regarding the horrendous consequences of nuclear radiation on human health and the potentially catastrophic impact on the earth’s climate. In the absence of immediate initiation of good faith negotiations by all the existing nuclear weapon states, steps should be taken to refer the matter back to the ICJ for further instructions leading to complete nuclear disarmament. These negotiations must necessarily identify essential conditions for achieving that goal without setting obstructive preconditions for the start of real negotiations.

“Organized public opinion is effective public conscience. Law is a codification of the public conscience.”

Nation-states are a central player in the formulation of international law, but they are not its sole arbiters. Organized public opinion is effective public conscience. Law is a codification of the public conscience. The universal principles of justice and the will of humanity as a whole are not fully and adequately represented by national governments. International law cannot be defined or based on what any individual country may or may not accept. The concept of sovereignty needs to evolve along with the evolution of the global community toward a greater inclusive notion of authority rooted in all peoples’ expectations about peace, security and dignity. International law, in short, must be predicated on the rights of not only nation-states but also the rights of individual citizens within nations and the rights of humanity as a whole.²

Nuclear weapons constitute a clear and present danger to the security of all humanity. The risks of terrorism, the spread of radioactive fallout, and the possibility of serious impact on climate change mean that the future of the whole world depends on the actions of individual

sovereign entities. All humanity has a right to a voice in determining the legality of actions by nation-states that may have ramifications far beyond their national boundaries. The authority of all sovereign entities rests with humanity as a whole. Civil society, which is presently the most evolved vehicle for the participation of humanity in global affairs, has already had a major influence on prevailing concepts of international humanitarian law and the legality of nuclear weapons. The core of the nuclear weapons problem is the challenge of evolving effective institutions for global governance. The solution to this and other serious challenges can only be resolved by humanity as a whole. More effective mechanisms are urgently needed to involve and give expression to the will of humanity on the legality of nuclear weapons. The threat or use of nuclear weapons is completely incompatible with the authority foundations of international law based on the people's expectations in the global community.

Recently, Kazakhstan launched a global initiative for the abolition of nuclear weapons called The Atom Project. The devastating impact of nearly 500 Soviet nuclear tests during the Cold War has led to cancer rates 50% higher than elsewhere in Kazakhstan, afflicting more than 1.5 million victims with early death, disease and birth deformities. Kazakhstan renounced and eliminated its nuclear arsenal 20 years ago. Now it is launching a global program of public education to be followed by a global referendum of humanity to garner international support for a nuclear-weapons-free world. Building on this example, we propose an initiative by nations and civil society to convert the negative pressure on Iran to forego nuclear weapons into a positive multi-national initiative for a nuclear-weapons-free world. Nuclear weapons constitute a threat to all humanity and to the physical environment of the earth. No nation has the right to unilaterally possess or wield a weapon whose consequences endanger the entire human race. A global referendum would provide an opportunity to all humanity to voice its views on this issue, giving concrete endorsement to the idea that the foundations of global authority rest with the aggregate of people of the earth-space community.

3. Collateral Threats

It is important to celebrate real successes such as START as a victory of multilateralism. The growing intensity of extremist positions based on religious, ethnic or political ideologies represents a serious threat to both national and global human security. We cannot afford to be complacent. If we want people to make peace, we must be able to curb the vitiating impact of hate speech. The development of global communications systems facilitates the instantaneous dissemination of inflammatory material both within nations and across national borders. Concerted efforts are needed to counter the social and psychological threats to multilateralism and world peace by celebrating all positive initiatives to create a more conducive atmosphere for peace and cooperation.

The threat of illicit nuclear material proliferation and terrorism is growing. All countries with nuclear weapons or energy programs are potential hosts for illegal transfers of nuclear technology and are vulnerable to accidents and theft during the transit of nuclear materials. The prospect of illicit trade in nuclear materials leading to nuclear terrorism poses catastrophic threats that necessitate far stronger measures to control access and drastically reduce the size of nuclear stockpiles. The known stockpile of highly enriched uranium is sufficient for the manufacture of more than ten thousand nuclear weapons. The absence of a safe repository for spent nuclear fuels in many countries, which necessitates their transport over long distances, makes these nuclear wastes highly vulnerable to both accidents and theft. South

East Europe is particularly susceptible to illicit trade in nuclear materials. The existence of largely neglected depositories of radioactive wastes in places such as the Vinca Institute of Nuclear Sciences at Belgrade demands urgent remedial efforts to ensure their safe storage and permanent disposal.

The vulnerability of modern computer networks to cyber-attack represents a new category of catastrophic threats to national and human security. This form of attack challenges traditional principles of deterrence. Unknown attackers make it extremely difficult to retaliate or hold the perpetrators accountable. In addition, an offensive and defensive cyber ‘arms’ race is escalating. This danger not only affects on-line systems, but also off-line nuclear command and control systems. While it is not clear to what extent military systems might be susceptible to cyber-attack, it is evident that global networks controlling governance, finance, economy and other major fields of social activity are extremely vulnerable. The use of cyber-attacks to counter nuclear fuel processing in Iran sets a dangerous precedent for new forms of terrorism. There is an urgent need to formulate new international law norms to completely outlaw electronic forms of aggression and terrorism, most especially those directed against civil functions essential for the survival and stability of modern society.

4. Nuclear Energy, Human Rights & International Law

The challenges related to non-proliferation and abolition of nuclear weapons are aggravated by the necessity of vastly increasing global energy production during the next half century. Nuclear energy is also a potential source of bulk energy that does not contribute to raising the levels of atmospheric CO₂. Consumption of enriched uranium for energy production also offers one way to reduce the enormous stocks of nuclear waste, while at the same time aggravating the risks of theft or diversion for military purposes. Moreover, nuclear accidents at Chernobyl and Fukushima are indicative of the immeasurable risks involved with the reliance on nuclear energy. The production of nuclear energy generates a series of challenges that may endure for hundreds of thousands of years.

The prospects for expansion of nuclear energy are constrained by four unresolved problems: high relative energy cost, especially when the full costs of catastrophic risk which make it impossible to privately insure new facilities are taken into account; perceived adverse safety, environmental and health effects; potential security risks stemming from proliferation and terrorism; and unresolved challenges in long-term management of nuclear wastes. Combined, these factors have generated high levels of public resistance to the expansion of nuclear energy in many countries and the decision of several other countries, including Germany and Switzerland, to completely phase out existing plants. Although much progress is being made to guarantee the security of highly enriched uranium worldwide, much more needs to be done urgently. Real understanding of the danger has still not penetrated governments and decision-making bodies.

The environmental and health risks associated with nuclear energy also raise important issues regarding the responsibility of generating states for the consequences of nuclear accidents that extend beyond their national boundaries. International licensing mechanisms are needed to clearly define the responsibilities and regulate the operations of nuclear energy producers, while safeguarding the rights and welfare of those who may be inadvertently affected. Full evaluation of the feasibility and desirability of future reliance on nuclear energy must

take into account the full range of political, social, medical, economic and ecological issues. Given the complex risks associated with nuclear energy, widespread public discussion and debate are needed to inform and educate world public opinion and global public policy.

5. Conclusions

The following concrete measures can be immediately taken to further progress on these issues:

“Aggression and war are products of culture and can be radically reduced by cultural means. War can and must be abolished.”

1. Initiative by international statesmen and non-aligned nations to induce Iran to take a positive leadership role in garnering international support for a nuclear-weapons-free world, as a means to provide a positive solution for the pending crisis in the Middle East and strengthen the commitment of Iran to remain a non-nuclear weapons state.
2. Concerted effort of civil society organizations and sympathetic national governments to conduct a global program of public education to challenge myths and superstitions regarding nuclear weapons that obstruct steps toward complete nuclear disarmament.
3. Exploratory steps to constitute an international consortium of civil society organizations and national governments to conduct a global referendum for a credible assessment of the will of humanity regarding the legality of nuclear weapons.
4. Reference back to the International Court of Justice for review of its 1996 Advisory Opinion on the legality of nuclear weapons and specific time-bound responsibilities of nuclear weapon states for achieving complete nuclear disarmament.
5. Formulation of a time-bound plan and steps leading to complete nuclear disarmament to be presented at the NATO conference in Split, Croatia on May 10-11, 2013.
6. Establishment of international advisory licensing boards to regulate the establishment and operation of nuclear energy reactors.

Scientific evidence rejects the view that aggression and violence are a natural and inevitable characteristic of human behavior. Biologically, war is not a necessary part of the human condition. War results from multiple motivations and plays multiple roles in human affairs. After centuries of incessant warfare, the establishment of enduring peace in Western Europe after 1945 clearly illustrates that aggression and war are products of culture and can be radically reduced by cultural means. War can and must be abolished. The total abolition of nuclear weapons and shift from nuclear to renewable energy resources will constitute landmark steps toward this essential goal.

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Notes

1. Winston Nagan, “Simulated ICJ Judgment: Revisiting the Lawfulness of the Threat or Use of Nuclear Weapons,” *Cadmus* 1, no. 4 (2012): 93-115.
2. Winston Nagan and Garry Jacobs, “New Paradigm for Global Rule of Law,” *Cadmus* 1, no. 4(2012):130-146.

An Arctic Nuclear-Weapon-Free Zone – Needed Now

Adele Buckley, Physicist, Engineer and Environmental Scientist;
Member of Pugwash Council

Climate change and nuclear weapons, the two great security threats of the 21st century, are uniquely influential in the Arctic. Although the current risk of conflict is low, the global future is potentially turbulent. There is a ‘new’ Arctic because of meltdown induced by climate change. Some see great economic opportunities; others see ecological and human security threats. Governance requires new national and multinational agreements; *now is the time* to gain acceptance for a future nuclear-weapon-free Arctic.

Virtually all circumpolar governments have stated an Arctic policy of cooperation and diplomacy; one example is the 2011 Search and Rescue Agreement where there will be coordinated multilateral management. Nevertheless, each nation is making significant additions to their military presence and has already built or plans to build new naval hardware. Logistics support from the armed forces is needed because there must be orderly enforcement of regulations, so military strategy in the Arctic is not the sole purpose of this build up. However, the presence of nuclear weapons on or under the sea, in the air, or in missile bases just does not fit this picture. The opportunity exists now to start negotiations for the Arctic to be a Nuclear-Weapon-Free Zone (NWFZ). There are already seven NWFZ treaties under the United Nations, covering the southern hemisphere—Antarctica was the first—and some north of the equator such as the Central Asian NWFZ. These treaties are flexible to accommodate the needs of each region, but all require non-possession, non-deployment, non-manufacture, non-use, and these commitments must be verifiable and of unlimited duration. After ratification, these treaties must go through the legislative machinery of the nuclear weapon states for recognition and assurance that the region will not be the target of a nuclear attack.

There is a growing pressure to rid the world of nuclear weapons, not only from the majority of global citizens, but from influential elder statesmen, and civil society organizations. A Nuclear Weapons Convention, or the equivalent, a series of universal multilateral treaties is called for by the UN Secretary General Ban Ki-moon.¹ An NWFZ is regional Nuclear Weapons Convention, and is a significant confidence building measure contributing to nuclear disarmament and enforces a global non-proliferation regime. This NWFZ would be the first of its kind, encompassing only northern territories of sovereign nations, rather than the entire country. The challenges on the path to an Arctic NWFZ are formidable, as both the United States (Alaska) and Russia are nuclear weapon states (NWS). Russia’s main submarine bases, and a significant part of other nuclear forces, are in the Arctic. However, the military emphasis is shifting to the East, as both Russia and the U.S. find it necessary to increase their presence in Asia to counter the growing Chinese submarine fleet, some of which will be equipped with nuclear weapons. NWFZs are able to be flexible to fit the needs of the region. At least in early stages of an NWFZ, it is possible that the United Nations’ *right of innocent passage* could apply to Russia and/or American submarines that may transit the Arctic, but commit not to patrol there. Other potential flexibility exists for the propo-

sed Arctic NWFZ since the agreed region could be surface waters only, the land north of the Arctic Circle, or entire land and sea territory, or only airspace, or, all territorial waters, surface and sub-surface. A possible overlap with some of the already-negotiated boundaries of the 2011 Search and Rescue Agreement* could be useful. It seems likely that the regional Arctic NWFZ would, initially, include only sovereign territory of NNWS (Non-Nuclear Weapon States).

Several circumpolar nations are in NATO, a nuclear alliance. The challenge posed by NATO [North Atlantic Treaty Organization] is evident, as many NATO members participated in *Cold Response*, Naval Games in the Arctic Ocean in March 2012, but it was not under the auspices of NATO. This hurdle is political, as NATO members have the right to be part of an NWFZ, without violating their membership agreement. NATO's presence in the Arctic would be a potential barrier to negotiations for an NWFZ. Russia does not want NATO to establish a presence in the Arctic, and NATO Secretary-General Rasmussen has assured Moscow that it does not intend to establish in the Arctic.² Canada, in NATO fora, continues to refuse discussions of the Arctic. It is of note that some NWFZ member-nations are also under a nuclear 'umbrella', e.g. Australia, and several former Soviet republics.

The Arctic NWFZ has been proposed in earlier years, by scientists on both sides of the Cold War, by civil society groups, within the Nordic Council, and by important indigenous groups, particularly the Inuit Circumpolar Conference in 1983, and even by Mikhail Gorbachev in 1987 (Arctic Zone of Peace). In late 2011, Denmark made that an explicit goal of its Arctic foreign policy, and, so far it is the only circumpolar state to do so. Several individual members of parliament in Canada have made the proposed Arctic NWFZ visible through motions in both upper and lower house and with a Private Member's Bill. The ten-country ministerial meetings of the Non-Proliferation and Disarmament Initiative (NPDI) have strongly endorsed NWFZs. It is to be hoped that Denmark's initiative, and the informal bilateral and multilateral discussions that flow from this will lead to a united commitment to an NWFZ by all the non-nuclear weapon states (NNWS) in the Arctic. With a united front, these countries have an opportunity for a positive outcome when they approach the NWS, United States and Russia. A resolution of the United Nations General Assembly is another useful tactic, provided that broad support is behind it. Historically, states outside an NWFZ have responded to global and regional pressure, over time, and become part of it.

The need for starting negotiations exists today. As noted in the Kingdom of Denmark Strategy for the Arctic 2011-2010, "The basis for the future of the Arctic is being created now..." As urged by Canadian Senator Dallaire, "...Now is the time to launch this initiative, while the Arctic is being shaped, because this opportunity will not last for long." To realize a northern vision of peace, all of us must continually press governments to uphold and progress with this proposal until such time as these governments are actively engaged in negotiating the Arctic NWFZ.

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Notes

1. SG/SM/11881 DC/3135, "'Contagious' Doctrine of Deterrence has made Non-Proliferation more difficult, raised New Risks, Secretary-General says In address to East-West Institute" *United Nations Dept. of Public Information* <http://www.un.org/News/Press/docs/2008/sgsm11881.doc.htm>
2. Ronald O'Rourke, *Changes in the Arctic: Background and Issues for Congress* (Washington, D.C.: Congressional Research Service, 2010).

* Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic, 12 May 2011 <http://library.arcticportal.org/1474/>

ACTIVITIES & EVENTS

Report on Recent Events

Humanities and the Contemporary World, Podgorica, Montenegro: The past five months have been among the most fruitful periods of activity for the World Academy in recent memory. It commenced with the conference hosted by the Montenegrin Academy of Sciences and Arts and co-organized by WAAS on June 7-9, 2012, as reported in the [Summer 2012 WAAS Newsletter](#). WAAS organized special sessions at the conference on two major programs of the Academy, Individuality and Limits to Rationality. Papers on Human Capital and Individuality form the content for the first issue of *Eruditio*, the Academy's new e-journal. Papers on Limits to Rationality will appear in the second issue of *Eruditio* due out in early 2013. A complete set of conference presentations, papers and photographs is now available on the [WAAS website](#).

First International Social Transformation Conference (ISTC) and the TESLA (The Earth Supreme Level Award) Conference, Split, Croatia: WAAS co-sponsored this major event on July 10-13, 2012, which is also reported in the WAAS Newsletter. The event featured about 80 prominent economists, scientists and scholars from around the world, including eight WAAS Fellows, examining monetary systems and alternative monetary systems, particularly energy currency. The nature and role of Money in social development have been recurring themes of the Academy's activities over the past decade. Participants emphasized that economy, energy and governance are strongly interconnected, that current debt-based money based on myopic policies creates instabilities, destroys natural, human and social capital. The following is the final version of the ISTC Declaration. The conference also announced the establishment of the TESLA, an award for unrecognized genius, an initiative with momentous potential for accelerating the development and recognition of human potential, as discussed in a [Seed-Idea](#) in this issue. The final [Declaration of the Split conference](#) is also included in this issue.

A Secure World Without Nuclear Weapons, Pugwash, Canada: One of the founding objectives of *Cadmus* is to promote closer cooperation between the World Academy and Pugwash Conferences, two institutions which share common origins, goals and a significant overlap in both founding and current membership. WAAS was represented at an important international workshop organized by Canadian Pugwash on Aug 16-18, 2012. A [report on the conference](#) is appended.

From a Nuclear Test Ban to a Nuclear-Weapons-Free World, Astana, Kazakhstan: Four WAAS Fellows participated in this high level international conference in Astana on August 27-29, 2012 organized by the Government of Kazakhstan and the Parliamentarians for Nuclear Non-proliferation and Disarmament (PNND) with the participation of about 100 parliamentarians from around the world. The conference declaration calls for an unequivocal ban on nuclear weapons testing and the total global abolition of nuclear weapons. This issue of *Cadmus* contains a report on the conference, ["Stop the Insanity"](#), the final Declaration issued by PNND, and the announcement of the launching of ["The Atom Project"](#), a very important global initiative for the abolition of nuclear weapons.

The 14th International Conference on [Sustainable Development and Eco-innovation](#), Krakow, Poland: The World Academy also co-sponsored a conference organized by WAAS Fellow Jan Dobrowolski at the AGH University of Science and Technology in Krakow on September 6-8, 2012. Building on two of its core project themes, WAAS conducted a special session on the role of human capital and individuality in scientific discovery, technological innovation, business and leadership.

[The Dream of a Global Knowledge Society](#), Dubrovnik, Croatia: WAAS is extremely pleased to announce that it has been elected a member of the Inter-University Centre in Dubrovnik, Croatia, an organization which includes about 120 leading universities from around the world among its members with the mission to promote international co-operation between academic institutions throughout the world. WAAS was a co-sponsor of the international conference on education conducted at IUC on September 9th to celebrate its 40th anniversary. The conference emphasized the critical linkage between education and employment and stressed the need for cost-effective strategies to deliver higher education to hundreds of millions of youth in developing countries.

Nuclear Threats and Security, Dubrovnik, Croatia: On September 14-16, 2012, the Academy conducted a high level international conference in collaboration with The European Leadership Network and the Dag Hammarskjöld University College of International Relations and Diplomacy with sponsorship and participation from NATO. Thirty-eight delegates, including 13 WAAS Fellows, participated in two days of intensive discussion on issues related to nuclear non-proliferation and disarmament, the legality of nuclear weapons and their use, illicit trade in nuclear materials, the dangers of nuclear terrorism, nuclear and cyber-security. Ted Whiteside, NATO Deputy Assistant Secretary General for Public Diplomacy, invited the organizers to prepare and present recommendations at a major NATO conference in Split in Spring 2013. An article "[Nuclear Threats and Security](#)" presenting highlights of the conference is included in this issue. Papers, session summaries and video recordings of the major presentations can be found [here](#).

European Forum for New Ideas 2012, Sopot, Poland: WAAS was a knowledge sponsor of a major [international conference](#) consisting of over 1300 delegates drawn primarily from business and government. Five Fellows of the Academy participated and made presentations in sessions focusing on the impact of demographic changes, employment challenges, innovation and energy. The conference concluded with the [Sopot Declaration 2012](#) containing specific recommendations to improve competitiveness, solidarity and quality of life in Europe.

The Power of Mind, Annual Meeting of the Club of Rome, Bucharest, Romania: Forty years after publishing its first Report on *The Limits to Growth*, the Club of Rome held its Annual Conference on October 1-2, 2012 in Bucharest, where it brought together some of the world's thought leaders to debate the most pressing challenges of our time. Participants included 19 WAAS Fellows. "[The Power of Mind](#)," which follows, provides an overview of the conference.

Declaration of the 1st International Social Transformation Conference — 12 July 2012, Split

Energizing Euro

The current crisis is an indictment against the dominant competitive economic theory. To liberate the economy from exponential debt growth, so that it works for people and the planet, we need to change how money works.

Our modern debt-based money creates the illusion of continuously growing wealth. But, it only delivers forced trade and labour; forced loss of bio-diversity and environmental degradation; instability of employment and local markets; misleading social incentives and misallocation of resources; deceptive indicators of economic progress that breed myopic policies demanding endless economic growth bound up with raising income inequality, which can usurp the Sovereignty of Nations, and pose threats to freedom and justice as the underlying principles of democracy.

Opportunities exist to provide an efficient, equitable and stable financial system. We need a feedback loop from nature to the economy, and a variety of democratically based alternatives are now arising that can help to resolve the problem.

1. Consider Renewable Energy the Key

Energy may become a basis for defining economic values, as industrialised societies are highly dependent upon it and traditional societies manage it better. Economic thinking in terms of time & energy (kWh) can help to address some of the basic systemic challenges facing our world. Currency designers and thinkers must engage with civil society and public authorities, understand their needs and show how different types of money, whether anchored to renewable energy or to any other terms of enumeration /basis of issue that meets with common consent, can help them achieve the goals of humanity.

2. See the Positive

Different types of competing alternative currencies, including those that use units of renewable energy as a reference, can help money in performing its traditional functions first of all as a unit of accounting but also as means of payment, including for taxation. However, they do not necessarily need to perform the function of storing value. Money anchored to renewables can be a good incentive for more ecologically sustainable consumption & production. It can mobilise investment in renewable energy and energy efficiency savings.

3. Adapt the Responses

A range of currency designers and other actors in society are coming together to support different currency innovations and are actively engaging at all political levels: in local, national and European governments, in all public sector agencies, environmental NGOs, charitable foundations, trade unions and among community activists. The best minds of physics, ecology, economics and currency design are now coming together as we search for a viable solution.

The European Union has the **opportunity and mandate** to set an example in using innovative approaches to tackle its current crises and maintain the vitality of society as well as the integrity of the Union.

- Institutional innovation and novel actions are needed in the field of economics and finance **to find viable solutions** that will help Europe and the world.
- The EU should support the scaling up and replication of existing currency innovations and associated research, information and education, and **promote insight on the best practices** in reaching public policy goals through alternative currencies not based on debt.
- The EU should **recognise the need of and provide support within its next Multiannual Financial Perspective for the establishment of an independent research institution** aimed at designing and implementing advanced currency models and providing quality advice on monetary policy to the decision makers.

It Is Time To Think Outside The Box!



Report on the Pugwash Conference on August 16-18, 2012

Canadian Pugwash organized a Strategic Foresight Workshop on “A Secure World without Nuclear Weapons” in Nova Scotia, Canada, August 16-18, 2012. The workshop was attended by over 30 Pugwashites from all around the world. This workshop included outstanding talks by Senator D. Roche, one of the founders of the Middle Powers Initiative, on “Reasons Why Nuclear Disarmament Has Not Been Achieved”; by H. Burkhardt on “Governance for a Peaceful World” and by D. Paul on “A 2012 View of the Possibility of a WWNW”. Among reasons why we have not achieved nuclear disarmament, Roche stressed the following: first, duplicity of nuclear weapons states; second, timidity of non-nuclear weapons states; third, media, that considers nuclear weapons as “old news” and never emphasizes the true danger of weapons for mass destruction; fourth, confused public opinion, nuclear weapons are never an issue in elections; and fifth, academic, business and religious leaders seldom speak of nuclear danger. Actually, quite some progress has been achieved in reducing the number of nuclear weapons in the USA and the Russian Federation, but there is a proliferation in other countries. Certainly, total elimination of nuclear weapons and abolition of war are demanding and complex tasks and major new ideas and approaches are necessary. The workshop concluded with recommendations focusing on the role of a Strategic Foresight technique in future planning, dialogue and advocacy on nuclear disarmament.

This is just one of the many Pugwash activities in early 2012. It is important to stress the significance of the conferences and workshops organized in Israel. See recent reports on the [Pugwash website](#) for more information.

Stop the Insanity — Report on Astana Conference

Editorial Note

None who has witnessed the human suffering inflicted by nuclear radiation at the Semipalatinsk Nuclear Test Site in Kazakhstan can justify the continued existence of nuclear weapons for a single moment longer than is needed to destroy all of them. Statistics do not tell the story, but if ever a statistic makes a compelling narrative, then the 1.5 million Kazakhstanis who have suffered from the fallout of nearly 500 nuclear tests over 4 decades must be more than sufficient to convince even the most skeptical. None of these victims were targeted by a nuclear weapon, but many have suffered a fate worse than death. A single intentional detonation of a modern nuclear weapon on a civilian population today would inflict even greater human suffering.

A powerful and irrefutable message emerges from the international conference “From a Nuclear Test Ban to a Nuclear Weapons Free World” held in Astana, Kazakhstan on 29th August 2012, the International Day Against Nuclear Tests. Continued reliance on nuclear weapons is pure madness. These weapons can only be utilized for one purpose — to target defenseless civilian populations. As the International Court of Justice made abundantly clear in its 1996 Advisory Opinion, any such usage would constitute a crime against humanity. But we also recognize that the continued existence of these weapons and the implicit or explicit threat of their use or proliferation are a crime of the highest order being perpetrated by nuclear weapons states and their satellites on a hapless world.

More than 100 foreign participants in the Astana conference unanimously concurred with their Kazakhstani hosts, the first nuclear power country to voluntarily renounce possession of nuclear weapons and destroy their entire arsenals. It is time to end this insanity and abolish nuclear weapons from the face of earth. The conference declaration follows below.

Parliamentary Appeal for Nuclear Abolition: From a Nuclear Test Ban to a Nuclear Weapons Free World

*Adopted in Astana, Kazakhstan
29 August 2012*

Legislators and governments have a responsibility to protect the security of citizens living within their jurisdictions and to protect their respective localities and the global commons for future generations.

The catastrophic humanitarian and environmental consequences from the nuclear tests in Semipalatinsk, Kazakhstan — and from other nuclear test sites around the world — demonstrate that the effects of any use of nuclear weapons are uncontrollable in time and space.

The possession of nuclear weapons generates a threat of their proliferation and use that pose risks to current and future generations that are unacceptable, unnecessary, unsustainable and contrary to basic ethical considerations and international humanitarian law.

The approximately \$100 billion spent annually on nuclear weapons by a few States consumes intellectual, scientific and financial resources desperately required to meet the environmental, social and human security needs of the 21st Century.

Some nations, like Kazakhstan, have decided to unilaterally abandon the possession of nuclear weapons and achieved greater security and prosperity as a result. Many nations, including all those in the Southern Hemisphere and a number in the Northern Hemisphere such as in Central Asia, have enhanced their security through establishing regional nuclear-weapon-free zones.

The United Nations General Assembly and the States Parties to the nuclear Non-Proliferation Treaty have called on States to establish the framework for a nuclear-weapons free world through negotiations on a nuclear weapons convention or package of agreements.

United Nations Secretary General Ban Ki-moon has circulated a Five-Point Plan for Nuclear Disarmament which includes a Model Nuclear Weapons Convention as a guide to such negotiations. The UNSG's plan has been supported by unanimous resolution of the Inter-Parliamentary Union representing over 150 parliaments and by various resolutions in national parliaments.

We commend President NursultanNazarbayev and the Republic of Kazakhstan for leadership in the global nuclear disarmament process including the closure of the Semipalatinsk nuclear test site on 29 August 1991, and the decision to voluntarily renounce the fourth largest nuclear arsenal in the world.

We also commend Kazakhstan for initiating the UN International Day Against Nuclear Tests, which was established by unanimous resolution of the United Nations General Assembly, with the aim to contribute to the goals of nuclear disarmament, non-proliferation, a worldwide ban on nuclear tests, and a world free from nuclear weapons.

We welcome moves by the Nuclear Weapon States to complete the ratification process for the protocols to nuclear weapon-free zone treaties, as steps to significantly strengthen the architecture of regional and international security.

We welcome in particular the negotiations between the Central Asian States on one side, and China, France, Russia, United Kingdom, and the United States on the other side, on the protocols to the Central Asian Nuclear-Weapon-Free Zone, and call for its early completion.

We support the new initiative of President Nazarbayev of the Republic of Kazakhstan for the adoption, within the UN of a Universal Declaration on the achievement of a nuclear-weapon-free world, as another important step towards the adoption of a nuclear weapons convention.

We are strengthened in our resolve to advance nuclear disarmament measures, by having visited the former Semipalatinsk Nuclear Test Site, where Soviet nuclear weapons were tested for more than forty years. 468 surface and underground nuclear tests were conducted from 1949 to 1989. One 50 megaton test alone was several thousand times more powerful than the bombs dropped on Hiroshima and Nagasaki. The tests have caused immeasurable medical and economic related suffering and death to millions of people.

Further progress needs to be made with concrete actions to achieve the abolition of nuclear weapons, according to a multilateral, transparent, irreversible and verifiable schedule.

Therefore, we call on parliaments and governments to:

- a) maintain existing moratoria against nuclear tests, and fully support the Comprehensive Nuclear Test Ban Treaty, including full ratification and entry-into-force, financing and support for the international monitoring network;*
- b) halt any further production of nuclear weapons;*
- c) operationalize the reduction of the role of nuclear weapons in their security doctrines;*
- d) establish prohibitions against nuclear weapons through action in their own legislatures;*
- e) establish guidelines that prohibit investment of public funds in enterprises engaged directly in manufacturing nuclear weapons or their delivery systems;*
- f) establish additional regional nuclear weapon free zones, as appropriate, especially in the Middle East, North East Asia and the Arctic;*
- g) commence preparatory work to build the framework for a nuclear weapons free world including through negotiations on a nuclear weapons convention or package of agreements.*

We are all stand united in our common determination to build nuclear-weapons-free world.

We pledge to act on and share this Appeal with legislative forums, decision makers and society.

The ATOM Project

The ATOM Project is a new international initiative to build global support for a permanent end to nuclear weapons testing and the total abolition of nuclear weapons. It was launched at a parliamentary assembly in Astana, Kazakhstan on August 29, 2012, the UN International Day Against Nuclear Tests, established in recognition of the closing of the Semipalatinsk nuclear test site on that day in 1991 by the President of Kazakhstan.

The ATOM Project seeks to unite global public opinion about the documented catastrophic humanitarian consequences of nuclear weapons testing – particularly the 450 nuclear tests conducted in Kazakhstan between 1949 and 1991 that adversely affected the health and lives of nearly two million people.

The Project recognizes that in recent decades the cause of abolishing nuclear weapons and weapons testing, and the awareness of the fundamental dangers they pose to life on the planet have been superseded by other humanitarian and environmental issues. The Project believes the time has come to revive among governments and publics around the world an awareness on how dangerous and appalling the consequences of the testing and retention of nuclear arsenals have been, and the threats that their continued possession pose to the human race.

The ATOM Project's mission is the unification of global support for a permanent end to nuclear weapons testing and the complete eradication of nuclear weapons in all countries.

The ATOM Project seeks to share documented reports and concerns of scientists, doctors and nuclear experts around the world about the medical and environmental costs of nuclear weapons production, testing and deployment to the general public and then inspire them to take concrete action by signing the international ATOM Project petition.

The ATOM Project is implementing an international communications effort with a particular focus on the publics of nuclear weapons-armed states to educate and remind them of the terrible realities of nuclear war that were documented in the 1945 attacks on the cities of Hiroshima and Nagasaki, and on the enormous human and environmental damage and suffering caused by the legacy of five decades of nuclear weapons testing that followed around the world until the Comprehensive Test Ban Treaty was open for signature in 1996.

The ATOM Project is also developing follow-up steps to its educational and awareness efforts to focus on the growing global concern about the threat of already existing nuclear weapons arsenals. These include developing plans to organize a movement to hold a global referendum that will enable people around the world to directly exercise their sovereign rights to express their position on the nuclear disarmament issue.

The ATOM Project highlights the suffering of individual victims of nuclear testing over the decades around the world and hopes to bring people's attention to the plight of possibly as many as 15 million victims of radiation poisoning that are suffering today worldwide in countries such as Kazakhstan, Marshall Islands, Japan and Algeria.

The ATOM Project believes that the stronger the public support it can generate through its educational and awareness-raising efforts and its international petition drive against weapons testing, the more it will be able to generate increased support for the efforts of non-governmental organizations (NGOs), parliamentarians and activists in support of the initiative to influence the leaders of major nations towards achieving a nuclear-weapons-free reality.

The ATOM Project features the stories and images of some of the survivors and victims of the 40 years of nuclear testing in Eastern Kazakhstan and of the severe physical consequences suffered by their descendants. Though sometimes difficult to witness, these individuals are featured in the campaign in order to demonstrate the human toll of nuclear weapons testing.

Kazakhstan's President Nursultan Nazarbayev launched the project at the opening plenary session of the 2012 international conference, *From a Nuclear Test Ban to a Nuclear-Weapons-Free World*, in Astana, Kazakhstan on August 29. The event drew more than 200 foreign participants from more than 75 countries and more than 20 international organizations, including the United Nations and the International Atomic Energy Agency. The conference included participants from more than 70 parliaments from around the world, including nuclear weapons possessing states and nuclear allies. The gathering was organized by the Majilis of the Parliament, the Nazarbayev Center and the Foreign Ministry on the Kazakhstani side, and by the Parliamentarians for Nuclear Non-Proliferation and Disarmament (PNND).

"We have an opportunity to once more remind the world about the tragic consequences of nuclear testing and to push the global community towards more decisive actions to achieve a final and definitive ban of such testing," President Nazarbayev told the conference participants, *"In this regard, Kazakhstan launches today the international campaign, The ATOM Project."*

"Under the Project, any human being on Earth, who stands against nuclear weapons, can sign an online petition (at www.theATOMproject.org) urging governments of the world to abandon nuclear tests forever and ensure early entry into force of the Comprehensive Nuclear Ban Treaty. I urge the participants of the conference and all the people of the goodwill to support the ATOM Project and to make the creation of the non-nuclear world our main goal," the President added.

The ATOM Project is an initiative of the Nazarbayev Center, whose mission includes working to advance President Nazarbayev's vision of a nuclear-weapons-free world.

At the conference, President Nazarbayev said that during the four decades of Soviet nuclear explosions at Semipalatinsk, Kazakhstan endured almost half of all nuclear tests carried out across the world. *"From day to day the radiation poisoned our steppes, rivers and lakes, slowly killing all life in the area,"* the President said. *"This nuclear evil destroyed the lives and health of over 1.5 million people of Kazakhstan living in the vicinity of the test site. The effects of the nuclear tests are being felt to this day."* Nazarbayev also suggested creating a global anti-nuclear parliamentary assembly. *"Parliamentarians from all countries of the world are present at the conference today. That is why this forum can be called a prototype of the global anti-nuclear parliamentary assembly. I suggest considering the establishment of such an institute,"* he said.

Nazarbayev also urged the necessity of developing the ATOM Project to revive popular movements around the world to campaign together for the abolishment of all nuclear weapons.

German Foreign Minister Guido Westerwelle who attended the August 29 conference also announced his country's support for the ATOM Project.

Dr. Lassina Zerbo, representing the Comprehensive Nuclear Test Ban Treaty Organization (CTBTO), acknowledged the success of the Comprehensive Test Ban Treaty over the past 16 years in virtually eliminating the specter of nuclear test explosions around the world. But he also warned against the dangers of complacency and the need to revive and reinvigorate the movement for global nuclear disarmament.

"Since the CTBT was adopted in 1996, the genie of nuclear testing has virtually been pushed back into the bottle. In contrast to some 400 explosions every decade since 1945, there were only two tests in the last decade. However, until we seal the bottle once and for all, until we bring the treaty into force, none of us can feel safe," Zerbo said.

Douglas Roche, founding chair of PNND and the Middle Powers Initiative (MPI), called on parliamentarians to strengthen their actions in their legislatures, guided by the Parliamentary Appeal for Nuclear Abolition adopted at the assembly. He outlined the MPI Framework Forum which is an informal process of governments exploring what would be required for establishing the framework for a nuclear-weapons-free world. The next meeting of the forum is scheduled to be hosted by the German Foreign Ministry in Berlin in February 2013.

Roche also called for a new effort for the heads of governments – similar to the Six Nation Initiative of 1984-1989 – to elevate the call and commence the process to achieve a nuclear-weapons-free world. His proposal was explored in more detail by Jonathan Granoff, President of the Global Security Institute, in a subsequent panel of the August 29 conference.

"PNND is honored to partner with The ATOM Project to help educate parliamentarians, governments and civil society about the horrific humanitarian consequences of any use of nuclear weapons and the imperative this provides for their abolition," PNND Global Coordinator Alyn Ware said after the conference, *"This assembly in Kazakhstan, which included a field trip to the former Soviet nuclear test site in Semipalatinsk, has energized parliamentarians from around the world to step up their action to abolish nuclear weapons, including through the spread of nuclear-weapon-free zones and the promotion of a global treaty to ban nuclear weapons."*

A 1991 study by the Nobel Peace Prize-winning organization International Physicians for the Prevention of Nuclear War (IPPNW) estimated that the radiation and radioactive materials from atmospheric testing taken in by people until the year 2000 would cause 430,000 cancer deaths, some of which had already occurred by the time the results were published.

The IPPNW study further predicted that roughly 2.4 million people could eventually die from cancer as a result of atmospheric testing. The CTBTO accepted this estimate and cited it in its own publications.

Bio-statistician Rosalie Bertell in her 1985 book *No Immediate Danger: Prognosis for a Radioactive Earth* estimated that the global casualties from nuclear weapons production and testing are much greater, probably between 10 million and 22 million.

According to Bertell, these casualties are comprised as follows:

- Fetal and infant deaths: 68,000 – 95,000
- Cancer victims: 2 – 6 million
- Severe congenital deformities: 18,000 – 22,000
- Mild congenital deformities: 7 million
- Genetically damaged children: .5 million – 9 million

Bertell's figures were higher than those previously accepted by the International Commission on Radiation Protection, which had assumed a safe minimum threshold for radiation exposure, and thus estimated a lower impact from low-level radiation exposure from the nuclear tests. However, the United Nations Scientific Committee on the Effects of Atomic Radiation in its Year 2000 Report to the UN General Assembly rejected the threshold argument, thus indicating that Bertell's figures were probably more accurate than the lower figures from ICRP.

The UN Committee also affirmed Bertell's estimates about the much greater risk of damage to genes, and cancer risks to babies and fetuses in utero and young children than accepted by the ICRP.

More recently, studies by the International Commission on Radiological Protection also support Bertell's earlier warnings and further challenge the threshold argument. They further point to the conclusion that there is no threshold, and that low-level radiation from global testing has thus caused – and will continue to cause – health effects proportionate to the total radiation absorbed globally, and not contingent on moderate or high-level individual absorption.

PNND Global Coordinator Alyn Ware said: *"I believe it is safe to claim that the global impact of nuclear tests is somewhere between 2 million and 6 million deaths, and up to 20 million people with severe health impacts including cancers (some of which are treatable like thyroid cancer but reduce life quality) and birth defects."*

In 2005, the International Commission on Radiological Protection published a further study on this subject entitled *Low-dose Extrapolation of Radiation-related Cancer Risk* (ICRP Publication 99 Ann. ICRP 35 (4), 2005) in which it concluded:

"The fundamental role of radiation-induced DNA damage in the induction of mutations and chromosome aberrations provides a framework for the analysis of risks at low radiation doses and low-dose-rate exposures. Although cells have a vast array of damage response mechanisms, these mechanisms are not foolproof, and it is clear that damaged or altered cells are capable of escaping these pathways and propagating. Cellular consequences of radiation-induced damage include chromosome aberrations and somatic cell mutations. Current understanding of mechanisms and quantitative data on dose and time-dose relationships support the LNT (linear non-threshold) hypothesis. Emerging results with regard to radiation-related adaptive responses, genomic instability, and bystander effects suggest that the risk of low-level exposure to ionising radiation is uncertain, and a simple extrapolation from high-dose effects may not be wholly justified in all instances."

The deformed children born to the inhabitants of Eastern Kazakhstan, who lived within the fallout region of the 40 years of Soviet nuclear testing, are witness to the horrific human reality of unlimited suffering, about which experts warn us using careful, precise scientific terms.

Trapped in the body of a three-year-old baby, 11-year-old Valikhan Serikkaliev suffers from Osteogenesis imperfecta leaving him crippled and unable to walk for life with severe bone deformity and abnormally small stature. His condition is incurable.

The face of Berik Syzdykov, 33, is horribly deformed and has become almost unrecognizable as a human face as facial cancers have developed. Syzdykov suffers from neuro-fibrolipomatous, benign tumor, residual encephalopathy and congenital glaucoma and had to undergo numerous surgeries. He is now incurably blind.

Three-year-old Rustam Zhanabayev lives in a foster home. His genetic deformities were so horrific that he was abandoned at birth by his parents. He was diagnosed with malfunction of the brain, and hydranencephaly at the stage of decompensation. His brains have the consistency of water. He spends his entire life in a wheelchair and cannot move his head because it is too heavy for his body.

Dina Batyrova is another abandoned baby that lives in a foster home. She was born with a malformation of the brain and hydranencephaly at the stage of decompensation. Her head is the size of her whole body and is filled with water. She cannot move it and she cannot even sit up. She might die at any moment.

The ATOM Project is dedicated to reviving and expanding the movement for global nuclear non-proliferation and disarmament to ensure that no more nuclear tests take place and that eventually the specter of nuclear war is fully and finally removed from the human race.

The goals of the Project were articulated well by the Honorary ATOM Project Ambassador Karipbek Kuyukov of Kazakhstan, a survivor of the effects of nuclear tests, who spoke at the assembly about the horrific impact of the tests on the lives of the people who had to endure them. *“Many (of the people in my life) have died from the radiation from the nuclear tests,”* he said. *“In one family, first the father then the mother then all the children passed away – the whole family of 10. I myself have no arms to hug you, but I have a heart as big as the open space of Kazakhstan ready to embrace the world for peace and nuclear disarmament.”*

Savas Hadjikyriacou, President & CEO, Coast to Coast Ltd

Roman Vassilenko, Deputy Director, The Nazarbayev Center, Kazakhstan

Martin Sieff, Chief Global Analyst, The Globalist Research Center;
Editor-at-Large, The Globalist

The Power of Mind — Report on the Club of Rome Annual Conference in Bucharest

Forty years after publishing its first Report on *The Limits to Growth*, the Club of Rome held the 2012 Annual Conference on October 1-2, 2012, in Bucharest, Romania, where it brought together some of the world's thought leaders to debate the most pressing challenges of our time.

In 1972, *The Limits to Growth* commanded critical attention and sparked debate around the world about the future of humanity. It pointed out that exceeding our global capacities for resource use and emissions would place significant limits on global economic development in the 21st century.

On the occasion of the 40th Anniversary of the Report, two of its original authors, Dennis Meadows and Jorgen Randers, commented on the development and progress over the last 40 years — and took a critical look into the future of our planet. Meadows stressed the inconvenient realization that humanity has entered the uncharted territory of “overshoot” and therefore “lost the option of a sustainable future”. Randers presented the findings of the newest Report to the Club of Rome 2052 — *A Global Forecast for the next forty years* and raised the possibility that humankind might not survive on the planet if it continued on its path of over-consumption and short-termism. Participants recognized the urgent necessity of measures to increase resilience and adaptation.

A working group on New Economy discussed a background paper by Ian Johnson and Garry Jacobs on the prospects for achieving radical and profound reform of the economic system to meet the challenges of the future. Parallel sessions explored the need for a change in humanity's value system and sustainable pathways for future energy supply. The Governor of the National Bank of Romania, Mr. Mugur Isărescu, called for reform of the International Banking System. Mircea Malitza's reflected on his earlier Report to the Club on education, *No Limits to Learning*.

The Annual Assembly elected Ernst Ulrich von Weizsäcker (Germany), Co-Chair, International Panel on Sustainable Resource Use, and Anders Wijkman (Sweden), former member of the European Parliament and Vice-Chairman of the Tällberg Foundation as new Co-Presidents of the Club, and Roberto Peccei as Vice-President of the Club. All three are also Fellows of the World Academy of Art & Science.

Cadmus Editorial Policy

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.

The clear intention behind the founding of Cadmus is to publish fresh perspectives, original ideas, new approaches that extend beyond contemporary thinking with regard to the relationship between knowledge, public policy and society today and their impact on human wealth, welfare and well-being – human security defined in its broadest terms. It is summed up in the motto “Leadership in Thought that Leads to Action”.

Special issues will also be published from time to time devoted to specific topics.

The primary guidelines for selection of articles are

- The article should address issues of broad social concern to the world today
- The article should not be one that naturally qualifies for publication in a more traditional journal devoted to a specialized discipline, i.e. it should be multi- or trans-disciplinary in scope and implications
- The article should present an original perspective, conception or practical approach
- The article may be in the form of an essay of ideas, an annotated theoretical discussion or fact-based scientific evaluation of evidence. We accept all three.

These guidelines are general and not rigid. Acceptance or rejection of an article does not reflect at all on its academic or intellectual merit, only on the degree of its alignment with the specific objectives of Cadmus.

Submissions may be of any length but preference will be given to articles of 5-10 pages and shorter pieces of 1-3 pages.

Style guidelines and an MS Word style sheet are available for download from the Editorial Policy section of our website.

We are also looking for articles to publish on www.Seed-Ideas.org that may not be included in the print edition of Cadmus but can serve as a platform for projecting and discussion of ideas among Fellows. We also plan to publish highlights of those articles and discussion on them in the printed version.

We would encourage you to share any manuscript with us that you think might be what we are looking for.

Open Access Policy

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The EU has been an enormous success, demonstrating beyond question that it is possible to begin with a very limited special-purpose federation and to gradually expand it, judging at each stage whether the cautiously-taken steps have been successful.

John Scales Avery, Federalism and Global Governance

Understanding money as a social organization, we perceive that it is capable of infinite multiplication, the same way information, knowledge, law, education and other social institutions can and do multiply.

Garry Jacobs and Ivo Šlaus, The Power of Money

The economics of the industrial era and the 20th century is not appropriate to the 21st century service economies, where human capital and natural capital are—and should be—increasingly valued, and estimates of “wealth”, national product, and human happiness and satisfaction are increasingly questioned.

Michael Marien, New and Appropriate Economics for the 21st Century

We rely on nuclear deterrence out of habit and because doctrines and ideas developed during the Cold War got locked in place by fear. But now we have emerged from the Cold War. It makes sense to reexamine the ideas of that time and critically reevaluate evidence, doctrines and judgments made during that time.

Ward Wilson, Myth, Hiroshima and Fear

The paper argues for a wider, inclusive concept of sovereignty that accords full recognition to the rights of individual citizens and the rights of the human community as a whole.

Winston P. Nagan and Garry Jacobs, Sovereignty and Nuclear Weapons

One rule of non-possession for all will be far more conducive than our present world of nuclear haves and have-nots to the development of a just and legitimate system of international law and institutions, which in turn will reinforce the durability of abolition of nuclear weapons.

John Burroughs, Nuclear Weapons, International Law and Global Order

There can be no reasonable situation where threat of use of nuclear weapons would be justified for self-defence. But such a threat exists in the very possession of nuclear weapons themselves. The implication, therefore, is that nuclear weapons must be totally eliminated from national arsenals.

Jasjit Singh, Legality of Nuclear Weapons

Cooperative security, in place of the current competitive security, is needed to meet not only the requirement of nuclear disarmament but also the many challenges of the 21st century.

Manpreet Sethi, India's Disarmament Initiative 1988

The core of the nuclear weapons problem is the challenge of evolving effective institutions for global governance. The solution to this and other serious challenges can only be resolved by humanity as a whole.

Garry Jacobs and Winston P. Nagan, Nuclear Threats and Security

Governance requires new national and multinational agreements; now is the time to gain acceptance for a future nuclear-weapon-free Arctic.

Adele Buckley, An Arctic Nuclear-Weapon-Free Zone – Needed Now

It is time for “genuine global action” that integrates the economic, social, and environmental dimensions of development.

Michael Marien, Resilient People, Resilient Planet: A Future Worth Choosing — Review

We are still awaiting the genius who can cast the simple fact that trillions of dollars evaporated into thin air during the 2008 financial debacle into a comprehensive theory of money, wealth and economy.

Ivo Šlaus and Garry Jacobs, Recognizing Unrecognized Genius

We need a perspective that recognizes the value of Human Capital across all age groups and seeks to optimize the development and utilization of this precious resource for human welfare and well-being.

Orio Giarini, Counter-Aging in the Post-Industrial Society

Currently, our world is predominantly driven by laws that put profit first. So, how do we shift to a new way of being that prioritises intrinsic values?

Polly Higgins, Seeding Intrinsic Values

What is called for is a way of thinking committed to a universal principle of sustainability and marked by a supranational, intercultural and inter-generational orientation.

F. J. Radermacher, Double Factor Ten

As the awareness of sustainability and climate change challenges increases what individual nations can deliver, the way of change is itself changing.

Robert E. Horn, Rio+20

We have the capacity by the strength of our ideas to convert the approaching revolution into rapid social evolution. Our call is revolutionary in spirit, evolutionary in implementation.

Ian Johnson & Garry Jacobs, Crises and Opportunities

The Arctic can play a key role in global sustainability if the exploitation of resources such as oil, natural gas and water is conducted in a manner that will not damage its ecosystem.

Francesco Stipo et al, The Future of the Arctic

There is now an increasing interest in such outside-the-box thinking even in conservative institutions, which are aware that the “wealth” created by the current financial system is increasingly illusory.

Jakob von Uexkull, Money, Debt, People and Planet

The economic system depicted by neo-classical theory does not encompass the most important characteristics of the Earth system in which human activity plays an important role.

Robert Hoffman, On the Need for New Economic Foundations

It will take what it always takes—courageous and determined action by individuals in the face of strong opposition—to fight for our vision of a world without war.

James T. Ranney, World Peace through Law

Continued . . .
