



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 2

April 2011

ISSN 2038-5242

SEED IDEAS

Call for United Action

— *Heitor Gurgulino de Souza*

Referendum

The Great Divorce: Economics & Philosophy

Policy for Full Employment

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The Perfect Storm

— *Ian Johnson*

Science and Economics

— *Orio Giarini*

Human Rights, Liberty & Socio-Economic Justice

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Global Prospects for Full Employment

— *Garry Jacobs and Ivo Šlaus*

Grossly Distorted Picture: GDP Still Misleading

— *Hazel Henderson*

Biopolicy- Building a Green Society

— *Agni Vlavianos Arvanitis*

Towards a Global Democratic Revolution

— *Andreas Bummel*

Governance

— *T. Natarajan*

Revolution in Human Affairs

— *Jasjit Singh*

Universal Nuclear Disarmament

— *Manpreet Sethi*

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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

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Published under Open Access policy guidelines. See Cadmus Editorial Policy for details.

Websites:

www.seed-ideas.org - www.cadmusjournal.org - www.newwelfare.org

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Printed by:

Akaram, Plot No.1, Nirmala Nagar, Thanjavur, India



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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.

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Inside this Issue

Cadmus Journal has been launched to promote leadership in thought that leads to action. The first issue focused on wealth and welfare and concluded that a paradigm change is necessary - a change as profound as the paradigm change in physical sciences at the beginning of the 20th century and much more profound than the Copernican paradigm change. The first issue of Cadmus identified major issues that need to be addressed by the new paradigm. In this issue Orio Giarini, Ian Johnson and Patrick Liedtke challenge some of the basic premises underlying prevailing economic theory. The new paradigm emphasizes the paramount significance of human and social capital, justifying the fact that the founder of economics - Adam Smith - was a moral philosopher primarily concerned with economics as a means to alleviate human suffering. Unemployment represents the single largest public failure, a massive waste of human capital as well as a threat to social stability and the survival and welfare of billions of people. Several other articles in this issue examine the challenges and opportunities to create global full employment.

Such a radical paradigm change requires adequate political, social and economic measures. Therefore, the first issue included a proposal for a new measure of welfare. It is rewarding that simultaneous with the publication of that issue, the Commission headed by Stiglitz and Sen, as well as the Human Development Report, came to similar conclusions. In this issue, Hazel Henderson provides recent poll data regarding the inadequacy of GDP, which she refers to as grossly distorting picture.

This issue of Cadmus broadens the discussion of wealth and welfare to explore the relationships between economics and governance. The word governance derives from Greek verb kubernao, which means 'to steer' (apparently first used by Plato). Often the verb to govern is conceived as restrictive. Yet as G. B. Shaw wrote in his Don Juan "to be in hell is to drift, to steer is to be in heaven." Governance is a creative system and activity intended to guarantee freedom, protect human rights and promote human security – three inseparable components of human welfare. Winston Nagan and Jasjit Singh explore this relationship in articles on economics and human rights and the linkage between economic opportunity and social stability.

As our physical universe has been characterized in terms of six numbers, human beings and human society can be characterized by the following nine numbers: 1) seven billion (soon to increase to nine, then very gradually decline to 2-3 billions) individual human beings – the source of ideas, actions and creativity; 2) five to ten thousand different cultures that provide stimulus and safety for individual human activities; 3) 203 sovereign states, some of them unified regionally, of which 193 are members of the UN, providing the structure for social cohesion, as well as for law and order; 4) numerous other organizations (networks of individuals): political parties, trade unions and civil society organizations, including some 40,000 international NGOs and several million more at the national and local level, where individuals express, accomplish and fulfill their specific interests and goals; of which regional academies and world societies such as WAAS, the Club of Rome and Pugwash share unique capabilities and responsibilities, and also 5) e-connections: Google,*

* Martin Rees, *Just Six Numbers*, Basic Books, 1999.

Facebook, Twitter – these new and constantly emerging interactions which are becoming more and more important; 6) professional associations (healthcare, engineering, law, etc); 7) commercial organizations structured as SMEs, multi- and transnational corporations, as well as structures for coordinating and monitoring their activities; 8) more complex networks involving individuals (e.g. experts) and social structures (e.g. nations, governments, academies, societies) such as IPCC and the Inter Academy Panel, underscoring interactions among different entities, and 9) all of these united as one global, interconnected world.

These complex networks require governance. In a rapidly changing interconnected world, safety and social structure need not only to be robust in order to survive; they must also be flexible and resilient to develop. Governing the complex, constantly changing social networks and individuals, each of these types of organization has its own undeniable sovereignty. It is necessary to protect the rights of each one, yet also assure synergistic, non-destructive interactions among all of them. Just like economic activity, governance is everywhere, and there is no way to distance economics from governance or from its various aspects, including policies and politics. Governance is essential. At the same time, it is necessary to recognize that major improvements are necessary and that, possibly, we are also facing a governance paradigm change, as suggested in the articles by Agni Vlavianos Arvanitis, Andreas Bummel, and T. Natarajan.

Over the past few decades, the World Academy of Art and Science has organized General Assemblies and many workshops addressing the issue of governance. Many WAAS fellows have made major contributions to this subject: Harold Lasswell, Harlan Cleveland, Walter T. Anderson, David Held and James Rosenau can be truly called fathers of global governance. Of course, the governance of our Academy has to serve as a role-model for global organizations.

The world needs breakthrough, out-of-the box ideas concerning governance and human security in order to arrive at the new paradigms in economics and politics required to meet the challenges and tap the opportunities of the 21st Century. Therefore, this second issue of Cadmus starts with a new section: Seed-Ideas– short proposals, often the result of collective brainstorming and, therefore, authorless, as well as presentation of a proposed new Vision and Mission of the Academy for readers to ponder and respond to. These are followed by a section containing articles on welfare and well-being, a section on governance, and a section on human security followed by reports on activities of fellows of WAAS and members of the Club of Rome relevant for these endeavors.

Ivo Šlaus, Chairman

Garry Jacobs, Managing Editor

Orio Giarini, Editor-in-Chief

World Academy of Art & Science

Draft Vision & Mission

In 2009-10, the Academy conducted a strategic planning process in which more than sixty Fellows contributed ideas and proposals relating to the future direction and activities of WAAS. Based on these contributions, the Strategic Planning Committee submitted two reports to the Board of Trustees which include draft vision and mission statements. The first report containing the Mission statement was approved by the Board at a meeting in August 2009 and was disseminated to Fellows. The second report, which contains a Vision statement, was presented to the Board in May 2010. We publish both statements here and invite you to make comments and suggestions in the forum at www.seed-ideas.org.

WAAS 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.

Humanity's progress has been driven by democracy, technology, education, social organization, knowledge, cultural and spiritual values. War, exploration, the quest for empire, trade, money, agriculture, urbanization, industrialization, science and religion have each in turn played a role. Yet the accumulated knowledge and mastery of the material world and biological processes provide insufficient guidance to meet our present challenges. We need also to acquire a commensurate knowledge of ourselves as an evolving race, the sources of our creativity and our errors, the processes that govern our individual and collective advancement, as well as the inherent tendencies of our race that oppose and often destroy our most cherished values and accomplishments.

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 have 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 infrastructure on which we depend and strive to build a better world.

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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 Academy's founders when they 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 in 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 these ideals 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 an organization founded with such powerful intentions can become a magnet and focal point for like-minded agencies to project creative ideas that possess the inherent dynamism for self-fulfillment.

WAAS Mission

The World Academy of Art and Science is an association of committed individuals drawn from diverse cultures, nationalities, occupations and intellectual pursuits spanning the arts, humanities and sciences, conscious of the profound social consequences and policy implications of knowledge, and united by a common aspiration to address the urgent challenges and emerging opportunities confronting humanity today. Our mission is to promote cross-disciplinary dialogue generative of original ideas and integrated perspectives that comprehend the root causes and effective remedies for our common problems, while furthering those currents of thought and social movement that affirm the value of human dignity and equitable development. The Academy dedicates itself to the pursuit of creative, catalytic ideas that can provide to present and future generations enlightened leadership in thought that leads to effective action.

Strategic Planning Committee

SEED-IDEAS

Call for United Action*

Very warm congratulations on the new journal - it certainly has a role to play in today's world.

Over the holidays I had an opportunity to read some of the well-written articles in the first issue of *Cadmus*. I also read and liked "OUR VISION" published on the second page in which you requested "my ideas" regarding this new endeavor.

WAAS completed fifty years in 2010, Club of Rome reached its fortieth anniversary in 2008, and the Pugwash Movement completed 50 years in 2007. I happen to be a Fellow of WAAS as well as a member of the Club of Rome and I believe all three organizations have done a very good job since their creation.

But my "new idea" is that the three organizations – WAAS, Club of Rome and the Pugwash Movement – should sincerely join forces and act together, so that we can fully utilize our collective experience, intellectual capacity and foresight. Together, we will have a much stronger voice to get our good messages out to the world and be listened to by policy makers, parliaments, governments, academics and all societies in general, in both the industrialized and developing economies.

If we really want to "Promote Leadership in Thought that Leads to Action" our three organizations should join our minds, our visions and our hands to accomplish it. Isolated, as we have been and still are now, we will not be able to do it as effectively as we can as a single body. And I know it will require much courage and a strong commitment from all in order to create a NEW and hopefully, much stronger endeavour for the future of all mankind.

I follow closely the university world. In Europe, up to a couple of years ago, there were two very similar European associations of universities, doing similar and parallel work for a very long time. They have finally decided to join forces and "merged". Today there exists only one European Association of Universities, which is much more active, objective, and efficient, with a much stronger voice in Europe, larger than the two earlier ones and already having impact across the world.

I know it will not be easy. Possibly it will mean a long journey ahead for us, but that is my "new idea" I wish to share with all of you. While that happens – and until it happens – I plan to continue to work and contribute to all, as much as I possibly can, within my "limits", and in my hopefully still long remaining years on our lovely small planet Earth.

In my ten years of living in Asia I have learned an oriental proverb that says: "for every long journey there is always a first step".

Heitor Gurgulino de Souza,
Former Rector, United Nations University; Member, WAAS and Club of Rome.

* The ideas exposed above have not been previously discussed with my good colleagues, either from WAAS or from the Club of Rome

Referendum

A new world is struggling to be born. Or rather a world of separate and disparate people and nations is struggling to evolve into a diversified but unified human community. Throughout history two opposing tendencies have spurred the evolution of society – the urge of the collective to ensure its security, sustenance and power through exercise of authority, organization and imposition of uniformity, and the urge of the individual for free and creative expression of his ideas, feelings and initiatives for self-affirmation, accomplishment and enjoyment. This has given rise to the two most powerful ideals of the modern era – freedom and equality – the right of the individual to pursue his own life and the right of the collective to govern in the name of equal rights for the benefit of all its members. They are embodied in two powerful forces – individual initiative and social organization – creative self-expression and cooperative endeavor.

In the name of freedom, individuals have claimed the right to do anything they liked, irrespective of its impact on other individuals and rejecting the right of society to claim compensation through taxation for its contribution in their achievements. In the name of society, social organizations strive to preserve and perpetuate their ideas and power, demanding conformity, submission and even sacrifice of life from their members for the welfare or glory of the group.

Through most of the 20th century, these ideals vied with one another for supremacy, each proclaiming its sacred heritage and claim to superior virtue. One gave birth to political democracy and competitive capitalism. The other became the seed for democratic socialism and autocratic communism. Feudalism, monarchy, oligarchy, state socialism, fascism, and plutocracy have been various past incarnations of the collectivist urge. An endless succession of revolutionary and sometimes anarchic movements – England in 1688, America in 1776, France in 1789, India in 1947, Hungary in 1956, university campuses from 1964-68, Tunisia, Egypt, Libya, Bahrain and Syria in 2011 – are expressive of the assertion of individuality striving for freedom or a more just and equitable collective. In the name of these high ideals, hereditary ruling families have been supplanted by elected leaders, fragmentary kingdoms have been molded into unified nation states, and mighty empires have been toppled. Always the process was imperfect and the outcome far less idealistic than the principles in whose name it was carried out. Founding fathers proclaimed that all men are created equal yet retained the right to own slaves. Revolutionaries fought tyranny on behalf of the common people, only to erect new elites and authoritarian mechanisms more tyrannical than those they deposed. The disenfranchised have risen decrying despotic power, only to succumb to the lure of the power they opposed.

These two apparently contradictory forces are in fact complementary to one another, both indispensable for the evolution and fulfillment of humanity. As Sri Aurobindo observed, the individual cannot thrive as an isolated being or grow in isolated freedom. “He grows by his relations with others and his freedom must exercise itself in a progressive self-harmonizing with the freedom of his fellow-beings.”¹ Through the interaction between these opposing tendencies and even by their contention, humanity as a whole has evolved a freer, more tolerant, enlightened, peaceful, cooperative, prosperous and unified individual and collective existence. History has been a playground, a classroom and a workshop in which humanity

has fashioned new tools and instruments for peaceful co-existence, constructive interaction and effective governance. The result has been a progressive discovery and unfolding of the unlimited potential of cooperative, productive and creative interactions and interrelationships between people. The development of social organization as a means for governance is the most marvelous invention, the most miraculous technology so far envisioned, yet still so very incomplete and imperfect. After fighting for land, kingdoms, gold, trade routes and oil, it turns out that human beings are the world's most precious resource, that human capital and social capital the true source of lasting peace and prosperity.

With the end of the Cold War, this struggle has entered a new phase of unprecedented challenges and opportunities. No longer is the world polarized by the struggle between competing ideologies. No longer are special interests, power elites, ruling parties and nation states the ultimate protagonists. Humanity as a whole and the individuals of which it consists play with and struggle against its myriad constituent elements to effect a more free, transparent, just and equitable global life of society.

Guided by reason, we look for a way to reconcile disparate viewpoints, yet continuously encounter immovable obstacles that refuse their allegiance in the name of one ideal or the other. Reason that affirms the rights of the individual also affirms the necessity of order and organization for governance of the collective. When reason seeks to govern life, it necessarily relies on fixed principles and organizational mechanism. This generates a fundamental dilemma, for unlike the mechanical order of the universe, life is a mobile, progressive and evolving force. It develops by the interaction of an immense number of different and often conflicting or even contradictory elements. "A thorough-going scientific regulation of life can only be brought about by a thorough-going mechanism of life."² Sooner or later humanity finds efforts to impose a purely rational and scientific organization of social life intolerable and it rebels against the suppression of its freedom. Thus, the challenge of global governance exposes a deeper challenge imposed by *limits to rationality*, the title of a WAAS project and topic to be explored in the next issue of Cadmus.

The ever-present threats to human security posed by nuclear weapons, the international financial crisis, climate change, rising levels of unemployment, persistent poverty and terrorism compel us to evolve more progressive institutions that reconcile freedom with equality, creative individuality with consistent organization, institutions that are truly global and yet at the same time representative and protective of the varied needs, interests, aspirations and rights of seven billion individuals. For the first time in modern history, the legitimate claims of both freedom and equality can be affirmed without awakening accusations of ideological heresy.

Yet this new phase will be as challenging as those that have come before. No simple formula or doctrinaire principle can provide us with a clear path for reconciling freedom and equality, the interests of individuals and communities with that of nations and humanity as a whole. The world today has inherited a motley assortment of hybrid institutions, reflective of the power equations of earlier generations – hereditary rule and military strongmen still preside over unwilling citizenry in many countries, corrupt political parties control the media and dominate elections in many others, the victors of a war ended 65 years ago still enjoy undemocratic privileges and veto power in the UN Security Council, military power still claims that might is right, wealth and corporate interests exert inordinate influence on laws

and public policy, idealistic non-governmental organizations are ruled autocratically by a few in the name of the many.

At the same time individuals and minorities have been empowered as never before to make their voices heard, assert their rights, seek protection and redress under law. Google, Facebook and Twitter have broken forever the monopolistic control on communications which earlier enabled governments to conceal, censor and distort information flows since time immemorial. China tries to control the World Wide Web the same way two centuries earlier Britain prohibited its newspapers from any reference to the French Revolution unfolding across the English Channel for fear the conflagration would spread to its own populace. Today Wikileaks exposes the underside of national self-interest in international diplomacy. Andreas Bummel refers to this phenomenon in his article "Global Democratic Revolution" as a movement toward planetary consciousness and global democracy.

Solutions have not been wanting. Calls for the formation of truly democratic and representative institutions for global governance date back more than a century. Nature and necessity now compel us to accept what idealism inspired earlier generations to conceive. The task is complex and daunting, but no longer inconceivable or impossible. Silent and unnoticed, the threads of global governance have been evolving over the past six decades into a thick fabric of interconnectedness and interdependence. Knowledge and communications have become global. Economic integration has reached the point where no nation can thrive in isolation and every nation has a stake in maintenance of world peace and global cooperation. Still we live in a fragmentary world of national governments asserting imaginary sovereignty and refusing accountability to humanity-at-large, private interests asserting the right to exploit the global commons, groups in authority at all levels insisting on retention of their past privileges.

Yet beneath the conflicting ideologies and struggling powers, a foundation is being laid for the future. The corner stone of that foundation is recognition of the value and rights of each and every individual human being, while acknowledging the collective rights of humanity as a whole to an equitable sharing of the global commons. This requires a re-conceptualization of the idea of sovereignty. The sovereign rights of nations must ultimately derive from a consensus of the individuals and groups of which they are composed and the representative nature of national government, not merely from the power of an elite to dominate or suppress its own citizenry. The individual also has a legitimate claim to sovereignty over beliefs, speech, personal property and actions. So too, humanity as a whole has an undeniable sovereign claim for security in all its forms, just governance, economic opportunity and an equitable sharing of the global commons. None of these sovereign rights are absolute in themselves. None can be truly and fully ensured unless they all are. The rights of the individual will always be subject to usurpation by the tyranny of the state, unless the international community as a whole assumes responsibility for protecting those rights. The rights of the nation will always be subject to the tyranny of larger, stronger states, unless guaranteed by a system of global cooperative security and representative governance. The rights of individuals and of humanity as a whole will continue to be neglected in favor of commercial interests, social organizations, privileged classes, dominant communities and national power, unless and until humanity evolves a truly effective system of global governance.

Calls for the democratization of the UN, abolition of the veto power, outlawing the use and possession of nuclear weapons, formation of a global cooperative security system, establishment of a world central bank and a global parliament may still seem utopian to many, but they are as inevitable and irresistible as the progressive evolution of democratic freedom and individual human rights over the past few centuries. What is needed are practical steps to generate awareness, build consensus and release a revolutionary or evolutionary movement akin to those of the past, but on a global scale. In her article “Biopolicy”, Agni Vlavianos Arvanitis proposes a world referendum. A referendum of the world’s people on the fundamental principles that should govern the evolution of the human community is a practical step that can be taken now. Conducted electronically, it can reach out and involve one billion people, possibly many more. It is a seed-idea, an idea whose time has come.

A new world is struggling to be born, and as T. Natarajan writes in his article “Governance”, we have a unique opportunity to make it happen now.

Notes

1. Sri Aurobindo, *The Human Cycle*, Pondicherry 1997, 214
2. *ibid*, 212-3.

The Great Divorce: Economics & Philosophy

For early economists such as Adam Smith, Thomas Malthus and John Stuart Mill, economics was indivisible from moral philosophy. Their objective was not to discover eternal laws governing the functioning of human economic systems, but rather to improve upon the prevailing economic system to support the survival and enhance the economic security of all members of society. They understood an obvious fact that has since been lost sight of. Economic systems are man-made and, as such, can always be modified and improved. Smith understood that trade was a powerful means for enhancing the wealth of nations, hence his emphasis on the power of markets. Yet he knew that unregulated markets were a throw-back to the law of the jungle, a principle that might have governed the evolution of animals and primitive humanoid species in the past, but was unacceptable as the guiding principle for societies that claimed to be civilized and cultured. Writing at the very dawn of the Industrial Revolution, Smith understood that economic systems are not ends in themselves, but rather means for enhancing human welfare and security and that they are capable of continuous evolution and improvement.

The Industrial Revolution that dominated the 19th Century was a triumph of technology – proof of extraordinary human capacity for knowledge and invention, unimagined productive potential of technology, unparalleled creation of wealth among a small but growing class of entrepreneurs. A new respect for scientific knowledge, a quest to discover the laws of nature and to apply the power of Nature for productive purposes led to a marriage of science and technology, which began, largely unconsciously, at the turn of the 20th century and matured after the second world war, reaching a summit during the past 25 years. This phenomenal success led inevitably to the extension of the same scientific outlook to the study of human society.

Somewhere in this process, we forgot a basic truth self-evident to early economists. Unlike the laws and principles that govern physical and chemical processes, the laws of economics are man-made. They reflect the values, aspirations, knowledge, attitudes and culture of the human beings who fashion and utilize them. Unlike the physical laws of nature, which remain constant over eons, society and its systems are capable of continuous and rapid evolutionary progress. They are not governed by infallible and unfailing laws of Nature to which we are forced to adapt. They are products of human consciousness, human choice and initiative. While we may confidently depend on the law of gravity to keep our feet firmly planted on the ground from now to eternity, to rely on free markets or any other economic mechanism as the final arbiters of human welfare is no more scientific than the belief that drought and pestilence are God's punishment for human indiscretion. Yet to a large extent this is what has occurred. Thus, we resign ourselves to the fact that tens of millions of today's youth are unable to find gainful employment and more than three billion people still live in poverty, struggling for survival from one day to the next without a modicum of human security, while a small but growing number accumulate unimaginable wealth beyond any possible need or capacity to utilize it.

The divorce of economic science from moral philosophy has led to a sense of bewilderment, helplessness and fatality regarding the functioning of our economic systems at precisely the moment when we have the collective knowledge and capability to eradicate

poverty globally. The world today possesses the capacity to produce sufficient food, clothing, housing, education, health care and other basic necessities for all its citizens. At the same time there is a huge backlog of unmet human needs. What we lack is an effective system for harnessing our collective capacity to meet those needs. High levels of unemployment and underemployment demonstrate that our economic system is unable to effectively utilize the most precious of all resources – the human resource. Human beings learn by doing. Our capacities increase when they are exercised. Experience gives us skill, knowledge and maturity of judgment. Like a neglected machine that rusts or a muscle that is not exercised, in the absence of use our human capacities gradually deteriorate. Today we live in an economic system which denies to huge numbers the opportunity to exercise and develop their basic human endowments. Surely we can do better.

Economic systems reflect human choices, not incontrovertible laws of nature. The laws governing modern economy are largely based on Roman conceptions of property, which upheld the rights of the private property owner to just rewards, but failed to take into account the collective rights of global society for protection and a just return on the use of our global commons. As Winston Nagan points out in “Human Rights and Economic Theory”, the narrow conception of individual freedom founded on private property rights advocated by neoliberalism neglects a much wider, more humane conception of social democracy, freedom from want and human security affirmed by the New Deal, the Atlantic Charter and the UN Charter.

It is time that global society fully recognizes its power and responsibility for crafting an economic system that provides economic opportunity and human security to all its members.

Policy for Full Employment

“Employment is the single greatest challenge facing humanity today,” according to Ian Johnson, Secretary General of the Club of Rome, in his opening remarks to an international conference last November—remarkable words coming from an organization known principally for its concern about environmental issues. In similar fashion, renowned security expert Jasjit Singh, a World Academy Fellow, surprised high level government officials when he identified the dangers of domestic social unrest arising from lack of employment opportunities as the single greatest security threat facing India today. In recognition of this threat, five years ago India passed the National Rural Employment Guarantee Act, which provides 100 days of paid work to 45 million of the poorest households in the country. These are just two examples of the growing realization that the world economy is pursuing an unsustainable path in which technological advances, economic growth and swelling corporate profits proceed hand in hand with high and rising levels of income inequality and youth unemployment (twice the level of adult unemployment in most countries), at a time when social protection offered to the elderly and unemployed in many OECD countries is getting weaker.

The prevailing system results in a disproportionate distribution of wealth to those who already possess far more than they need, while leaving billions of people struggling for survival in abject poverty. In an age of rising expectations fueled by the spread of democracy and global telecommunications, both social stability and human values necessitate a concerted effort to rectify the imbalances and inequity of the present social configuration. In “Human Rights and Employment” (Cadmus Issue 1), Winston Nagan argues that access to remunerative employment opportunities must be recognized as a fundamental human right.¹ In “Human Rights, Liberty & Socio-Economic Justice” (this issue), he calls for a wider conception of freedom that embraces economic and social as well as political rights. In “Global Prospects for Full Employment” (this issue), Garry Jacobs and Ivo Šlaus quantify the challenge of full employment and cite both theoretical principles and historical evidence to show that, given the right policies and strategies, it is indeed an achievable goal.

In a report to the Club of Rome “The Employment Dilemma and the Future of Work”, Orio Giarini and Patrick Liedtke outline a comprehensive full employment policy.² They too affirm the imperative that human beings must be assured opportunities to produce for themselves. Social welfare payments may be sufficient to keep the body alive, but not to promote healthy social and psychological adjustment. Their approach is based on a new way of organizing work in modern service economies that will guarantee every citizen at least the minimum amount of paid work required to meet their economic needs in a dignified manner. They emphasize that public policy is a principal determinant of how many jobs are created. The public sector directly and indirectly accounted for 28 percent of total employment in OECD countries in 2005, including 35 percent or more in Denmark, France and Norway.³ In the five largest economies of the EU, more than half of all adults depend upon governments for all or part of their weekly income in the form of salaries, pensions or welfare payments. The corresponding figure in the USA is 42 percent.⁴ Today 40 to 50 percent of all public workers are employed in health, education and other social services. Recognizing the important role that both private and public sectors play in generating economic security, they envision a public-private partnership which combined public responsibility with private inventiveness,

initiative and entrepreneurship. Public and private initiative are complementary measures that should work in concert, as in Switzerland's three pillar pension system, in which the first pillar is guaranteed by public institutions and the second pillar by private sources.

Part-time work can play a key role in ensuring employment security. The conception of full time employment has evolved over time. During the last century, the number of working hours in most developed nations declined by 40 to 50%, from an average of 3500 to 4000 a year to under 2000 today. This was achieved through a process of allocating the gains from increasing productivity between increases in income and increases in leisure time. Thus, from a historical perspective part-time work has already become the norm. It has also been consciously promoted by many countries as a means to more equitably distribute work opportunities. Studies suggest that part-time workers can be more productive and derive greater work satisfaction. The hourly productivity of part-time employees in US has been estimated to be 28 percent higher than that of full-time workers.⁵ Traditionally part time work has been more prevalent among women. In Sweden, for instance, approximately 50% of public sector employees are women working part time. In 2009, 19 percent of all employees and 32 percent of employed women in the EU27 worked part-time. In Netherlands, which dramatically reduced its unemployment rate in the 1990s by removing disincentives for part-time, part-time employment represented 48.3 percent of total employment in 2009.⁶ Over the past few decades part-time employment in OECD countries has grown more than twice as fast as full time jobs.⁷ In 2010 only three percent of new jobs were full-time in Britain.⁸

The current system of full-time work, preceded by full-time education and followed by full-time retirement, is far from optimal. Students pursuing higher education can benefit immensely by gaining actual work experience during the period of higher education, thereby helping them meet the rising costs of tertiary education, acquire work-related skills and mitigate the influx of youth into an already over-crowded full-time workforce. The integration of part-time work with education through a dual apprenticeship system has already been successfully adopted in Austria, Germany and Switzerland, where a large majority of youth spend several days each week in educational institutions and participate in employer-operated training and apprenticeship the remainder of the time. At the other end of their working life, older workers typically possess valuable experience that is lost on their retirement. With increasing longevity and sustained health, most also possess the energy and interest to remain actively engaged well beyond the traditional retirement age. Extending the working age through a gradual and progressive shift from part-time employment to retirement will keep them actively engaged and provide a continued source of income to support them during an extended life span.

The authors argue that a further extension of the principle of part-time work can absorb the surplus labor that is presently unemployed. The objective of this system is to provide every single individual in society with adequate opportunities for remunerated productive activity. They envision a three tier public-private system of work. The first tier ensures to all those between 18 and 70 (or even 78) years of age a minimum number of hours of paid work (e.g. 20 hours a week) sufficient to meet economic needs that should be guaranteed by government. This tier would provide assured income to three groups that are often excluded from the employment market – youth, women and the elderly. Work would be remunerated at a guaranteed minimum level corresponding to the idea of a negative income tax and

funded by existing unemployment, income support and welfare programs. Citizens would be required to undertake first tier in order to qualify for state benefits. Note that tier one employment can be provided by either the private or public sector, but responsibility lies with the government. State intervention in employment markets beyond this level is prohibited in order to guarantee a maximum of private initiative. Ensuring first tier work for all citizens will also enhance purchasing power to stimulate growth of second tier economic activities.

The second tier would consist of additional or alternative part- or full-time paid work based on individual choice for more hours or higher levels of compensation, according to the opportunities provided by the private sector. Those who seek and are able to obtain attractive full-time employment at higher levels of remuneration would be free to either combine or substitute this tier for the first tier opportunity. Payment in this tier would be based on efficiency rather than seniority. This tier would remain the central pillar of the economy, corresponding to the current system of career employment, but more flexible. It would provide a means to earn additional income for retirement.

The third tier includes non-monetarized self-production or unremunerated voluntary services offered to others. Voluntary work is quite common in the health, social, cultural and political sectors. A study in Germany found that 39 percent of men and 32 percent of women already participate in some form of benevolent or voluntary activity.⁹ Education and other sectors offer immense potential for expansion, especially among those of the elderly who have rich experience to share and no need for further paid employment.

The current economic system undervalues and underutilizes the most precious of all resources -- human capital. It fails to take into account the real value of unpaid work – care of children and the elderly, voluntary services to the community. It also fails to properly account for the true cost and value of natural resources, such as energy, thereby imposing an in-built bias in favor of mechanized rather than human work. Thus, an ultimate solution to the employment dilemma depends on the formulation of new economic theory, a third way, as discussed in Cadmus No.1.¹⁰

Notes

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The Perfect Storm: Economics, Finance and Socio-Ecology A Commentary*

Ian Johnson, Secretary General, Club of Rome.

The world is at an inflection point. A convergence of themes – seemingly disconnected – is integral and urgent to our very survival. Our world is headed into a **Perfect Storm** of an interconnected financial, ecological and social crisis. Almost all forward-looking assessments demonstrate that business as usual and incremental improvements will not be sufficient to take us to a future world blessed by equitable prosperity, safety, security and contentment.

And time is not on our side. The decisions we take over the coming decade will shape our common future for us and for our children. There may be threats in the gathering clouds of our perfect storm, but we have opportunities to shape, reshape and move an agenda towards a better tomorrow.

The warning signs are for all to see. Within the first decade of this Millennium we have seen five crises:

One: We have witnessed the moral crisis of a Planet with plenty, yet shared with so few. It remains indefensible that more than one third of our fellow humans remain in dire and absolute poverty. At the turn of the Century our world leaders pledged to halve world poverty by 2015. These goals will not be met.

Two: We remain in the midst of a global financial crisis: one that has affected millions of people throughout the world. What started as a series of largely containable national and regional banking crises from the 1970s onwards has transformed itself into a global crisis in the real economies of the world. Improved management and oversight of our financial systems have started, but the pace is glacial and the efforts remain woefully weak and sporadic.

Three: We have witnessed a food crisis as a result of the rapid growth in food commodity prices, and their impact on poor countries and poor people in those countries has resulted in many being pushed below the poverty line. The food crisis was due to many reasons: historic low prices that couldn't continue; technological plateaus in productivity and competition for land use.

Four: We have witnessed a global ecological crisis that affects us now and well into the future. The consequences of not repairing and then effectively managing the Planet's stock of natural capital will lead to unknown but potentially very dangerous outcomes. Fortunately, climate change has now moved to centre stage: so much so that it is easy to ignore other ecological issues such as the loss of forests, fisheries and biodiversity: all being lost at historic

* Based on two speeches given at the University Of Liechtenstein at a conference on responsible investing in September 2010 and a conference on global finance given during the Annual Assembly of the Club of Rome in October 2010.

and unprecedented rates. To be sure, climate change will make matters worse, yet hopefully it also provides us with a greater sense of urgency.

Five: An unemployment crisis of global proportions is upon us now. There is uncertainty about the future levels of unemployment, currently estimated globally at over 200 million, with perhaps up to a billion people under-employed. Our inability to create jobs will consign many millions to poverty, induce social and political unrest, and will undermine any hopes for a more secure and sustainable world. Unemployment remains the single largest global failure.

1. The World We are Moving Towards

As we reflect upon the observations of this past decade it is worth considering for a moment the world of tomorrow. If we look forward to 2050: well within our children's lifetime we can envisage a number of significant changes:

- Population will likely grow from close to 7 billion to perhaps 9.5 billion (current estimates range from around 8 to 10.5 billion).
- Global GDP is currently about US \$60 trillion. Even at modest per capita growth rates in the emerging economies of the world to meet poverty targets we could easily see a world (as we conventionally measure it today) of closer to US \$200 trillion. Three worlds sitting on our present one world!
- The current 20:80 split (20% of population earning 80% of national income) that has been consistent for the past two decades is starting to shift. This year (2010) represents an interesting watershed in terms of aggregate wealth: on a global GDP / Power Purchasing Parity (PPP) basis, the emerging economies are roughly now equal to the rich world -- significant geo-economic shift and potentially an important geo-political shift.
- Demand for goods and services are set to increase dramatically driven by population, rising per capita income, and the shift from current low per capita income consumption patterns. Demand for food is likely to more than double by 2050 and energy needs to increase threefold.
- Demand for clean water will rise to meet the needs of the present one billion plus people who have no access to potable water or decent sanitation and to meet incremental demands from a growing population. Water resources will continue to be stretched, although globally water will not be scarce. However the costs of harnessing water will rise exponentially and discontinuously and place huge fiscal and economic burdens on countries to deliver water. Together with the provision of potable water, dramatic increases (fourfold or more) in water efficiency in the agricultural sector will be needed.
- It is estimated that 27% of the world's population is under the age of fifteen: for the future, a large, capable and ready work force in the making? Perhaps? Or a major source of social unrest? Possibly? Future numbers are unknown. However, what is known is that unemployment fuels discontent and social turbulence. A sustainable future is a Job-full future.

The wealth of our nations is changing dramatically; the shifts in wealth are reshaping our global body politic; those left behind are growing in numbers and strength; and the search for prosperity has all too easily become a search for economic growth on the assumptions that growth alone would solve our problems.

Clearly, all of us benefit from well functioning eco-systems; financially sound, well managed and regulated financial systems; and strong social and human capital that allow for safe, secure and content human communities. Most of us want to live in a happier, fairer and safer world. If we are to achieve this, we need to reset our planetary clock, assess the issues that will drive us towards greater contentment in an increasingly interconnected world, and re-calibrate the philosophies, metrics and design assumptions behind the changes we have recently observed. These issues belong to a broad-based dialogue with many disciplines: from engineers to economists, from health professionals to bankers; from activists to philosophers; from old to young; and from poor Africa to rich Europe.

2. The World We Need

This note focuses on a small yet important sub-set of the above issues: the need to respond to the demonstrated failures we have observed in our economics and their translation into markets for goods, services and labour.

2.1 Our Economics are in Need of an Urgent Overhaul

The foundations for modern economics rest on assumptions that may have been true for our distant past but are no longer valid for our immediate future. They are based on a time in history so fundamentally different from today: a world in which natural resources were plenty; a time when globalisation had not infiltrated into every aspect of our economic life; a time when physical capital was scarce and natural capital abundant; and a time when aspirations and expectations were fundamentally different from today.

Our understanding of economic growth and wealth creation has, all too easily, lulled us into a sense of complacency that, at best was illusory and, at worst, damaging. We have floundered on the assumptions that economic growth would produce wealth for all. It has not. Economics has become divorced from real values; and in doing so, relative prices of the various forms of capital and labour are seriously out of alignment.

Our measurement of wealth rarely takes into account the very things we truly value: safety, security, a clean environment, the strong social capital we enjoy. Neither does it measure the full economic costs of unemployment.

Our understanding of uncertainty is so rarely factored into our economic public policy-making, yet we live in a world with many unknowns and risks including the potential for non-linear events (such as in climate change). We need to assess and value the options we have for dealing with the risks we face.

Our economic measurements have managed to ignore the very form of capital we now recognize as being in short supply: natural capital. We value and account for the depletion of our natural capital at zero; a worse business decision is hard to imagine! As Herman Daly once noted “the current accounting system treats the earth as a business in liquidation”.

We need a new economics that measures real wealth and promotes real wealth creation and growth. Indices need to be created which reflect real values to society. Fortunately this issue is now occupying the time of a number of noteworthy economists such as Stiglitz, Sen, Daly, Constanza, Korten and others. We will see whether such thinking permeates the ministries of finance throughout the world and the global financial institutions they represent. So far rhetoric has been well ahead of reality.

2.2 Bad Economics Produces Unsound Markets

Markets have their role. They are the centre piece of neo-classical economic thinking; however, we require markets that do not reward avarice, speculation and destruction, but ones that increase employment opportunities, restore and repair our natural capital, and ones where equity and fairness dominate our actions. Financial markets require trust to operate, yet we now exist in a very real “trust deficit” due to the actions of a few in the private sector coupled with absentee government structures that did not provide oversight for the public good. Greater transparency and oversight are required at the national and international levels if public trust is to be regained.

Markets need to be re-oriented to:

- Moving wealth into productive and sustainable investment opportunities and measuring real gains.
- Developing new market mechanisms that can better realize the real value of all assets, including natural capital.
- Substituting opaqueness for transparency to reduce financial risks.
- Substituting prudence and predictability for the kind of “casino banking” that has produced such spectacular failings and human misery.

We must re-orient our markets so that real values are reflected in decisions. It is important to recall that the founding fathers of economics believed that markets would produce goods and services that would help people genuinely prosper and would do so at fair prices. We must now ensure that housing markets provide for homes and not property speculation; that carbon markets are built to reduce global pollution; that water markets are created to conserve a costly and all too often wasted commodity; and that commercial markets facilitate the creation of jobs.

2.3 Enlightened Public Policy is Required

As we move further into the future we will recognize that the public good content, whether at the national or international level, will increase. It is often the case that the “externality” is larger than the “internality”; that is to say the unintended and often unmeasured economic impacts are greater than the intended or internal impacts of investment or policy actions. These unintended impacts are often equated with the notion of the public good: the real value to society at large. Capturing the public good is not always easy and can lead to over-zealous regulation; but done well, it can provide the right risk-reward framework in which both private returns and public returns are maximised.

Indeed it is hard to imagine that decisions made by the private sector, in finance or in

investments, do not have a public or societal impact and vice versa. The market for public-private goods will increase. Indeed, the public sector has often underwritten the changes in corporate financial activities and trading: the internet, now so much part of nano-second decision-making in private currency markets, is the direct result of public investment and the creation of the internet as an accessible global good.

A role for the public sector includes:

- Lengthening the market for natural capital goods and services and other sustainability investments. Many goods and services such as forests, freshwater supplies, biological diversity that are essential for a sustainable world require decades and sometimes generations before benefits can be realized. Markets are often short term and, left alone, would not typically result in investments for long term returns. Fiscal or regulatory policies can help “lengthen” the term for such investments.
- Ensuring, at least for all public investments (and encouraging for private investments) the use of real values for natural resources. We now have the knowledge to calculate and estimate the real costs of natural resources that reflect their full value to society.
- Encouraging, through funding and fiscal incentives, innovation towards sustainability.
- Creating, through global co-operation, long-term markets for global public goods such as carbon emissions. A longer more ambitious target for greenhouse gas emissions together with an enhanced and efficient regulatory and institutional framework must be a high priority. “Issues without passports” are likely to grow: creative and responsible common goods market-makers will prosper.
- Ensuring that levels of transparency and accountability are established, agreed and adhered to.
- Ensuring that the greed and “tail-end” speculative gains are not able to undermine the resilience of the financial system.
- Partnering with the private sector to provide “patient capital” and capture positive externalities.

2.4 More Jobs are Needed for Social, Economic and Moral Reasons

Despite the high levels of people wanting jobs throughout the world, we are steadily producing more and more goods and services with less and less people. With one or two notable exceptions, capital continues to substitute for labour: and for as long as it does, and in the absence of remedial actions, we are on a planetary collision course. Unemployment strikes every country and fuels discontent, alienation and a sense of hopelessness. In poor developing countries the inability to earn a living wage has profound consequences on nutrition within families as not enough food can be purchased, as well as on health care and education, so important for human capital formation. This in turn transforms itself into unrest, social upheaval and migration.

Increasingly we need to view employment as a global public good: borders are more porous than most of us imagine. We need to embed employment concerns into our economic thinking and our market activities: never before has the issue of jobs been as urgent as it is

today. Economic systems based upon current and largely outmoded economic theory appear incapable of generating the levels of employment that will provide opportunity for those seeking work and, just as importantly, those coming into the labour market. A comprehensive review is now urgently required that identifies the key barriers, assesses modifications to economic theory and application, and promotes major opportunities for increasing employment.

2.5 We Cannot Continue with an Unequal World

Despite the world's great progress we now find ourselves in a more unequal world than ever. The poorest 40% of the world's population account for only 5% of global income. The global financial assets of the wealthy have multiplied exponentially, from \$ 12 trillion in 1980 to almost \$ 170 trillion in 2006. We need to ensure that the poorest parts of the world are brought into the mainstream of decent, real and lasting prosperity: this will require many actions, too numerous to outline here, but not only limited to meeting international agreements on trade, development aid and other resource transfers. Greater equality fosters greater social cohesion and greater trust within societies: whether developed or developing. A fairer world is a safer world. A safer world is a richer world.

3. Conclusion

There is little doubt in my mind that we will need to re-calibrate our assumptions of, and measurements for, economic growth and the measurement of wealth as well as the reconstruction of markets to meet future needs. We need to re-set our navigational instruments and direct them towards a new mission: that of real wealth creation, real prosperity for all; a more caring and safer world. This is, of course, a challenge and one that will require major shifts in how we manage our economic and social affairs. But we should treat it as just that: a challenge. A challenge for new technologies to play a role; a challenge for new and creative markets to deliver the goods and services humanity really needs; a challenge to move us in a more transparent marketplace and one where market prices reflect real values and real values produce real wealth. Responsible markets and responsible investment strategies will be a cornerstone of the major shifts we need to secure a healthier and happier future. The marketplace for innovation, ideas and the goods and services that align with the real needs of the 21st Century will grow dramatically. The largest challenge we face will be to create the opportunities for meaningful employment across the globe for the maximum people. We can do it, but only if we dramatically change our economic models and assumptions and increase our political will to make full employment a reality. To not take on this challenge is to turn our backs on the aspirations and needs of the bulk of humanity.

We have arrived at an important window in our recent economic and social history. With concerted actions, renewed commitment to sustainable development, and a desire to manage the "tail-end" excesses of extreme greed and extreme poverty, we can avoid the **"Perfect Storm"** and we can move towards a more enlightened period in our history. Several scientists have suggested that we are in a new geological age: "Anthropocene": the era where humankind is the most profound shaper of the geological age. We are in control of our destiny and the destiny of the Planet. We have choices and it is now time to exercise them.

Science and Economics: The Case of Uncertainty & Disequilibrium

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1. Neoclassical Economics & the “General Equilibrium” System

1.1 Supply and Demand in a Static “Perfect” Equilibrium

The act of selling or buying goods always takes place at a given moment or instant in time, at which a price is agreed and paid. The general economic system is considered by standard economics to be based on a “General Equilibrium” which represents the various transactions taking place in the overall economic system. Prices agreed for transactions represent the equilibrium point between supply and demand. Price, in this sense, is extremely important because it functions as the yardstick for measuring the real value of goods transacted (the exchange value) and is the measurement criterion for either the notion of supply (added value) in classical economics or the subjective, demand based notion of value in neoclassical economics.

Price thus represents a situation in which equilibrium is self-evident: equilibrium where supply is by definition equal to demand. The reference to time and equilibrium in this context is equivalent to that which dominated Newtonian science in the 18th and 19th centuries in Europe: the equilibrium between supply and demand is clearly analogous to the Newtonian equilibrium of our solar system. The planets, the sun and the moons of the various planets find themselves in a situation of “instant” equilibrium, which can be reproduced by, for example, photography. Reality is then contained, in its entirety, in an instant moment of time from which considerations of real time or time duration are excluded. This is in fact the application of “Cartesianism”, which posits that reality can be discovered by segmenting or isolating each part of any event or phenomenon in discrete (separate) units of time and space. As noted by Clark, this notion of instant time is the complement of the notion of universal time which pertains to the realm of metaphysics or religion.¹ The historical value of equilibrium theory in economics based on a monetarized price system relates to the fact that one of the essential features of the Industrial Revolution has been the monetarization of the economy as a tool for solving the logistic problems of exploiting ever higher levels of technology. However, giving the notion of price equilibrium universal significance and a kind of definitive scientific validity (based on the definition of science before Einstein) is much more a matter of belief or even ideology than a truly scientific approach.

The notion of equilibrium is not really a concept or an explanation, but rather a tautology (“something that is right because it is right”), which has been given the value or status of an axiom (those basic self-evident truths used in mathematics for developing subsequent logical

deductions). Understanding this notion of equilibrium, where supply is equal to demand, is essential because it explains why economic theory has from the beginning always tended to be one-sided. The notion of economic equilibrium, as the key preoccupation of classical economists in reducing scarcity or of their neoclassical successors in defining the behaviour of consumers, has engendered such attitudes as: “if supply and demand are of necessity equal, once we have clearly understood one part of the equation, we have also, by definition, defined the other side”. It is tantamount to a contradiction in terms. This simplification has proved to be a tricky one, for it has caused classical economists, for 150 years, to fail to understand that demand had to be expanded to cope with deflationary economic crises, and that it has, more recently, prevented neoclassical economists, concerned essentially with demand mechanisms, from getting to grips with the problems of rigidities of supply.

The notion of a general equilibrium at each instant in time is also bound up with the 19th century’s quest for certainty. In a positivist oriented scientific culture, certainty was equated with scientific evidence. If we have not yet achieved perfect equilibrium, or if our grasp of a given situation still falls short of total certainty, then, says the ideology, it is merely a matter of time; sooner or later perfect certainty will be ours.

The theory of perfect, instant (fundamentally timeless) equilibrium (which is in reality “certain” only because of a tautology) has thus become the premise for a system of thought and analysis which views the world as a piece of “contingent” imperfection. But imperfections and disequilibria are not “contingent”, they are the permanent hallmarks of development and dynamic reality.

Over the last decades, the imperfections of general equilibrium have been closely scrutinized by a large number of economists. The notions of incomplete and asymmetric information have entered the jargon of economic theory and analysis, in recognition of the many obstacles to achieving a perfect equilibrium.² But these notions are still used as if a perfect equilibrium could ever be achieved. The utopia of the scientists and positivists is still there to suggest that we can increase the level of information on market functioning to such a point that perfect equilibrium will one day be achieved. This reasoning simply shows that the notions of time of the pre-Einstein era - the idea of isolating instant moments of time outside reality - are still with us. Once we enter real time, uncertainty and disequilibrium become the reference criteria of reality. Introducing the notion of real time into the economics of supply and demand (in modern terms, service based production and consumption) is a radical alternative to the view of the economic process as being based on timeless (instant) equilibrium. Accepting time duration, i.e. real time, implies that any decision to produce is inevitably taken in a situation of greater or lesser uncertainty as regards the moment in time when the products or services will be available to the market. In this dynamic view of the economic process, it is recognized that any decision to produce is taken extant of the traditional moment of any economic equilibrium, and that any real price (or cost) definition is always ex-post taking into account all of the costs for distribution, utilisation, repair, maintenance, and recycling.

The moment in time when the price is fixed in the market is only a part, a subsystem, of the wider economic system. In the succession of decisions over time, from research to production, and then to distribution, and from the point of sale further on to utilization - based

activities down to the disposal and recycling of waste, the market function of fixing a price is an important event in the process, but only one element in the greater economic system. And in this greater economic system, uncertainty is not an instance of “imperfection”, but a given fact containing incompressible risk components. Any economic activity or endeavour is based on some unknown and uncertain factors or possibilities, simply because its objective and utilisation lie in the future.

Once we have accepted the dimension of real time, we can attempt to make any future event as probable as possible, but we cannot control it with absolute certainty because we cannot control future time, except by eliminating life. In nature as well as in economic systems, many competitive and often redundant production processes are continuously emerging, only some of which will ever reach the point of sale and/or the moment of utilization. Successful modern technologies are only a small part of all technologies, many of which have failed in spite of the money invested in them. One successful product on the market provides a source of compensation in a strategy based on many initiatives, a great number of which will fail. It is at this point that the role of demand, distinct in time from production, acquires a dimension and an importance which makes it an essential part of the economic system, or indeed of any living system.

1.2 Demand as a Selection Mechanism

In economic as in biological reality, an enormous number of uncertain acts of production are constantly occurring before being selected by demand (through the individuals and/or through the environment). There is an enormous difference between a process whose purpose is equilibrium (of supply and demand), and one in which demand has a selection, not an equilibrium function.

A similar attitude is adopted by Karl Popper in his refutation of induction and defence of empiricism.

There is no induction: we never argue from facts to theories, unless by way of refutation or “falsification”. This view of science can be selective, as, for example, with Darwin’s theory. By contrast, theories of method which assert that we proceed by induction stressing verification (rather than falsification) are typically Lamarckian: they stress instruction by the environment, rather than selection. ³

Current neoclassical demand-based economics views demand as giving instructions to the economy on how to do things and in so doing, provides evidence of the extent to which a fundamentally deterministic philosophy still permeates social sciences, economics in particular. By contrast, even if a process of selection can provide some hints and information as to its future operation, such hints will in practice always remain a hypothesis which can only be verified empirically later, by the facts. At the same time, an area of uncertainty will always persist because of the fundamental impossibility of forecasting a fully predictable environment if real time, evolution and dynamics are accepted as the attributes of real life.

It must be stressed and repeated that we are now in a dynamic situation in which a static, equilibrium theory of economics cannot help to solve our major problems or simply provide a reasonable valid view of the economic situation. Our hypothesis is that economic

equilibrium theories are fundamentally inefficient in their theoretical basis. But this evidence also precludes the possibility of simply returning to the older economic thinking that stresses the importance of supply. Time dimension gives a much broader meaning to the production function than it had in classical economics, and it also underlines the essential complementary role of demand. “Disequilibrium” theory requires a proper in-depth understanding of both demand and supply, and at different levels.

Whereas priority in economic theories could in the past swing from supply to demand, considered individually and separately as workable instruments, we now not only need to reassess the importance of the supply-side, but also the fact that the selection function of demand is an absolute necessity, a complement to the production function. By analogy with the quotation from Karl Popper, we could say that an economic system is obliged to produce on the basis of hypothesis (and may be even of dreams or of any other process stimulating action and initiative). This is the first essential step. But the demand process must also be as efficient as possible in its selective function (and must include criteria on how best to use material and human resources, and how best to reflect societal values).

All this of course does not mean that demand is totally unpredictable when production decisions are taken, but even the best market research on the modern economy always involve an incompressible level of approximation. We must accept that no certainty exists, but at the same time any approximation is better than no approximation at all. We have to live with an inevitable degree of uncertainty, which in itself provides the margin for improvement, modification, new ideas and progress.

In spite of appearing difficult at times, the selection function of demand is nonetheless essential. Production without control by selection can proliferate to the point of destroying the entire system. Cancer is a biological form of uncontrolled self-production with inefficient selection. Demand is efficient because of its ability to select. Deterministic philosophy which aspires to perfectly defined demand in advance, to pre-regulated production, is unnatural, can only be inefficient, and becomes a source of destruction of material and human resources. Ambitions can only survive through a path of “imperfections”; in a way, imperfections are the great road to learning and improvement.

Over time, demand must determine whether in reality available productions are useful. Sometimes, after initial feverish success (as with computer games for example), it may fade out very quickly. In other cases, the fact that this selection mechanism exists at all guarantees the striving for a better quality of production. Mozart produced his operas among hundreds of other contemporary composers. He became the essential reference and demand has selected him and every time we listen to his music on the radio or in concert, the selection mechanism is still active.

In the new Service Economy, where utilization value implies taking into account real time, demand fulfils an essential role complementary to production. It is no longer a matter of concentrating on either the supply or the demand side, as within the framework of general equilibrium theory, but on the economy as a whole. Accepting uncertainty means that we are coming closer to reality.

2. Equilibrium vs. Non-equilibrium

2.1 Economics between Certainty and Uncertainty, between Static and Real Time: a dialogue between economics & science?

Economic thinking is still very largely related to traditional Cartesian (and Newtonian) concepts of science, to the extent that a Nobel Prize winner like Prigogine has seen the possibility of a “new alliance” between human and natural sciences. They would be no longer different in kind: they are simply more or less indeterminate. Weisskopf for his part, defines the Heisenbergian Paradigm in the following way: “Heisenberg’s principle of uncertainty (or indeterminacy) implies that in microphysics the influence of the observer on the position and velocity of particles makes it impossible to ascertain both, their position and velocity, together. Thus, the bases of precise predictions are destroyed”.⁴ This leads to a different view of reality: “There is no complete causal determination of the future on the basis of available knowledge of the present. This means that every measurement creates a unique, not fully predictable, situation”. The conclusion can then be drawn that “we cannot observe the course of nature without disturbing it”. Niels Bohr has stated that “man is at once an actor and a spectator in the drama of existence”, and Max Born compared this situation to a “football game where the act of watching... applauding or hissing has an influence... on the players and thus on what is watched.”

According to Weisskopf, “Man is a finite and conditioned being. He is conditioned by his anatomy, physiology, life history, social environment, and innumerable other factors. The position of the scientist is no different; he is also a person subject to such conditions. He cannot step outside himself. His cognitive horizon is limited by his conditioning. Within the limits of these conditions man is free, and he can transcend them within the limits of his consciousness. However, this knowledge, scientific or otherwise, contains these conditions as (often silent) assumptions. The reality he recognizes is true reality under the conditions of his existence. He thinks and knows, but the “he” is a conditioned being.”

This ontological analysis contains ideas similar to the indeterminacy principle in physics and could be called the philosophical Heisenbergian paradigm. It is more than a coincidence that in two such disparate fields similar ideas were developed. They are rooted in the spirit of the times. The new ambience in metaphysics, physics, and politics is one of uncertainty. If pushed to its ultimate conclusion, the Newtonian model elevates man as the objective, detached, “scientific” observer to the level of an omniscient deity who can foresee the future. In contrast, the Heisenbergian model demotes man to a participant who cannot extricate himself from the reality he analyzes. This new world view exposes the helplessness and uncertainty which is inherent in the human situation and which was repressed and denied in Newtonian thought.

It is the recognition that “action is the setting in motion of a new beginning with an uncertain outcome”, which makes “action” both real and possible.

It is rather surprising that in recent decades, while “social” scientists of all kinds, economists in particular, have been chasing after an “objective” image of their “science”, and have often implied that social sciences would in this way one day come to bear comparison with the “more scientific” natural sciences, the latter have in the meantime moved away from the traditional Cartesian-Newtonian paradigm.

W. Weisskopf states very clearly that “The Newtonian paradigm, used in classical and neoclassical economics, interpreted the economy according to the pattern developed in classical physics and mechanics, and by analogy with the planetary system and clockwork: a closed, autonomous system, ruled by endogenous, mutually interdependent factors of highly selective nature, self-regulating and moving toward a determinate, predictable point of equilibrium. The Newtonian paradigm, in line with eighteenth century thinking, represents economic events as a reality independent of the observer. The observing subject is supposed to be detached from the observed object, but he can grasp this object with his reason. An objective reality, subject to natural laws, is comprehensible to and knowable by human reason. The idea of natural law was the intermediate link between subject and object which, despite their mutual independence, united them through ‘scientific’ understanding.”

“Thus separate subjects, objects, natural law, and reason formed a quaternary, unitary configuration. The natural laws were laws of causation, interpreted as *causae efficientes*, not *causae finales*; as moving forces, not aspirations and motivations; not only in non-human nature but also in the realm of human existence. The goal of this pattern of thought was to predict future events and to arrive at determinate solutions in all dimensions of reality. If all variables, all cause and effect relations were known, we could understand and predict the events in the universe, in society, and all human action. The basic conviction of most scientists was and to a large extent still is that despite the temporary ignorance, ineluctable laws determine all events and actions. No place was left for freedom, choice, uncertainty, and mystery. This pattern of thought was used in classical and neoclassical economics as the foundation of equilibrium models: it was supplemented by fictitious assumptions, such as perfect knowledge and perfect forecasting, and through elimination of time and change by the *ceteris paribus* clause. This paradigm, as applied in economics, was connected with a belief in the benefits, justice and fairness of the free market and industrial system.”

“The Cartesian mechanism of thinking, although effective and influential in situations where industrialization is the top priority and the best tool for organizing wealth and welfare, has raised a series of methodological and practical problems. Isolating monetized economic factors is a method that is today proving to be increasingly deficient. In order to clarify this point, consideration will first be given to the way the notion of science is often perceived in economics.”

It was customary in the nineteenth century to believe that the Cartesian or Newtonian method of scientific research consisted first in defining a situation or a problem clearly, identifying and measuring all its constituents, as if the said situation or problem could be fully determined (or at least assuming that anything left out had no appreciable influence on the system under observation). In this way, a water molecule can be isolated and studied. In the same way, Newton gave a clear view of celestial mechanics and the economist hoped to provide scientifically framed and determined “models” of reality. In practice, frequent use is still being made of this simple, even trivial, method which reflects the underlying assumption that the reality examined is for the most part “objective”. This view presupposes simple systems and as an essential corollary, the divisibility of time and space.

It has been clear in the natural sciences for many decades that even if a multitude of realities exist which we can profitably research in the “Cartesian” way, when we get down to

basic issues (such as What is matter?), and to issues related to “objectivity” (if such a thing exists), we find ourselves faced with extremely complex and even indeterminate systems. (Indeterminate is used here in a Heisenbergian sense. The whole controversy, started by Einstein with his “probabilistic” reality, is highly relevant to this issue).

If what has been said here is only partially acceptable, it nevertheless follows that it may benefit economics to question some basic assumptions, especially the notion of value, on which economics itself is founded, as well as its historical and cultural determinants with reference to the notions of time and space.

In the Cartesian-Newtonian universe, time is either infinite or specific: one can isolate a moment in time. One can examine “reality” statically as if it were a picture, freezing all movement. The equilibrium of Newton’s universe is like the equilibrium of the economists’ supply/demand curves: at a given moment in time (instant time) the situation is such and such. Simple, definable forces determine equilibrium situations, and each state or situation can be isolated.

Under such conditions, the relative behaviour of phenomena in time and space tends to disappear, or to be represented in a static framework, eliminating duration or real time.

Today, the notion of uncertainty has become a “fact of life”, linked to specific perceptions or to a particular business cycle. Furthermore, ever since Einstein had to admit implicitly, against his will and deep moral conviction, that God “plays with dice”, there has been a constantly growing volume of literature dealing with fundamentals concerning the nature of science and the structure of knowledge. Basic notions such as relative time/space, the indetermination of systems, the historical relativity of axioms, and uncertainty are proliferating across the entire research spectra of natural and social sciences.^{5, 6, 7}

Contrary to what happened in the nineteenth century when science was considered to be equivalent to a more efficient way of attaining “universal” truth and, as such, the rival of religion, it is now generally accepted that science is a method of “falsifying” (in Karl Popper’s terminology) all theories, hypotheses and facts. In other words, there is no such thing as “universal” scientific truth, but only a limited operational validity in time and space of any scientific law or theory (which means that “it works” for a certain period).

Our culture, by and large, is not yet accustomed to looking at science in this way. It is very revealing to find the survival of the “universal objectivity” notion of science even in recent literature. A brilliant example is “The Sleepwalkers” by Arthur Koestler, in which science and religion are treated as complementary ways of reaching universal truth. In our opinion, underlying these attitudes toward truth and science is again the notion of time/space. If time/space is considered to be something that can be isolated in a given moment or place, this “abstract” moment (like Newton’s notion of the universal equilibrium) can logically be considered to be of “universal value”.⁸ But this pretension to “universal” logic breaks down when mathematics tells us that “universal”, unchangeable (God-sent) axioms are no more such.

Economics itself has developed for over two centuries on the basis of this cultural background of a “static” Newtonian notion of time/space, which goes hand in hand with the assumption of certainty (as an acceptable, achievable goal) that still dominates today’s thinking.

Yet the notion of uncertainty has also started to make some important inroads in economic thinking. A major breakthrough will come with the adaptation of economics to the notions of real space/time dimensions, which implies taking into account real and relative duration. This process has already virtually begun. It calls in the first place for the definition and acceptance of a new notion of value.*

In general terms, it should be remembered that life itself, real life, is based on uncertainty. Risk and uncertainty characterize life not as chance, but as a condition, if only because life is real time, and risk and uncertainty are its attributes. The corollary is that:

future events for the Heisenbergian paradigm are the result of unpredictable human actions and reactions, ...if the Newtonian paradigm on the one hand enthrones man as a potentially omniscient, detached observer of an independent objective reality, ...at the same time nature, society and man are subject to inexorable “natural” laws which determine unequivocally man’s future and fate.⁴

We are bound to admit that, during the classical Industrial Revolution, such principles proved to be rather efficient. But from the end of last century we have witnessed the degradation of their significance (see the present confused and contradictory debate on the meaning, origin and solutions with regard to the “economic crises”. The perception that the “fundamentals” – which fundamentals? – are somewhat lost is easy to detect).

Over thirty years ago, Rene Passet, a French economist, wrote that economics has until now been concerned with “dead things”.[†] He starts his analysis by drawing attention to the correspondence between economic thinking during the past two centuries and changes in the notion of science.[‡] Dead and living things are opposites, analogous to another pair of opposites, static and real time. The transition from one to the other is a transition from utopian certainty to the challenge of real uncertainty, from essentially deterministic thinking to the possibility of building real responsibility and freedom, taking advantage of a largely indeterminate world.

Of course, too much uncertainty leads to impotence, which is precisely the reason why its origin must, whenever possible, be understood (as must our understanding that rigidities of economic supply are conditioned by the diminishing returns of technology). But in the end, the problem is how to live better, i.e. to learn how to face risks better.

A new synthesis (which we hope will soon take place) between advances in economics and the various social sciences, and the basic thinking underlying progress in natural sciences, is of vital importance.

2.2 From Newton to Prigogine: Equilibrium as a Goal or “Attractor” in a Far From Equilibrium System

“Today, wherever we look, we find evolution, diversification and instabilities. A fundamental reconceptualization of science is going on.... The artificial may be deterministic and reversible. The natural contains essential elements of randomness

* This is precisely the type of debate that Giardini’s *Dialogue on Wealth and Welfare* has tried to initiate.

† Rene Passet is one of the pioneers in building bridges for economists between modern developments in scientific thinking and economics; see for instance: Passet, Rene (1979) *L’économique et le vivant*, Payot, Paris.

‡ His testing of economic paradigms against the work of Ilya Prigogine is very promising.

and irreversibility. This leads to a new vision of matter that is no longer passive, as described in the mechanical world view, but associated with spontaneous activity. This change is so deep that I believe we can really speak about a new dialogue of man with nature....”

We are more and more numerous to think that fundamental laws of nature are irreversible and stochastic and that the deterministic and reversible roles are applicable only in limiting situations.

Today, our interest is shifting to known equilibrium systems, interacting with a surrounding environment through the entropy flow. The thermodynamic point of view is one of interaction; we could say a holistic one. Dynamical systems have no way to forget perturbations. In thermodynamics, perturbations may be forgotten. In the thermodynamic description including dissipation we have attractors.

Without attractors, our world would be chaotic. No general rules would ever have been formulated. Every system would pose a problem apart. We can now also understand in quite general terms what happens when we drive a system far from equilibrium. The attractor which dominated the behaviour of the system near equilibrium may become unstable, as a result of the flow of matter and energy which we direct at the system. Non-equilibrium becomes a source of order; new types of attractors, more complicated ones, may appear and give the system remarkable and new space-time properties.

*“I like to say that at equilibrium, matter is blind; far from equilibrium it may begin to see... “. **

These quotations come from Ilya Prigogine. He has been at the forefront of the research and debate now resounding in many sectors of natural and social sciences. The world over, books from many different horizons have contributed to convey the same message: acceptance of the notion of uncertainty, of disequilibrium, of real time taken in its duration, not as imperfections of our scientific knowledge, whatever the field, but as the hallmarks of the dynamics of life and evolution.[†]

A fundamental philosophical aspect of all these trends is the constantly growing interest in indeterminism, as can be seen from major publications such as the updating of the famous book by Karl Popper on “The Logic of Scientific Discovery”. His last three volumes (“Realism and the Game of Science”, “The Open Universe: an Argument for Indeterminism” and “Quantum Theory and the Schism in Physics”), published and republished from 1983, constitute a recent exhaustive “post script” to this fundamental work.⁹

Given this background, economics will hardly be capable of maintaining for long the notion of general equilibrium as the basic reference for a general theory applied to our contemporary world. At best, the notion of equilibrium might, in practice, be identified with the notion of “attractor”.

Attractors then are points of reference, indicators of directions (possible, probable or even improbable), in a real time dimension. By carefully reading the writings of many

* Excerpts taken from the Honda Lecture 1983 by Professor Ilya Prigogine, Nobel Prize in Chemistry in 1977, Professor at the Universities of Brussels and Austin, TX.

† See among others: Capra, Frank (in preparation) Keppel: Uncertainty, the ground for life.

contemporary economists, one soon discovers that, under the formal definition of the general equilibrium theory, goals, objectives and possible directions are described. But the real issue in accepting the idea that systems are essentially in a far from equilibrium state is a better identification of the dynamics of economic progress and evolution: the dynamics of real time. If we accept the fact of disequilibria and that every judgment is at best the expression of a probability, then accepting and managing uncertainty becomes the key issue.

Our ignorance and our imperfect information are an instance of disequilibrium, a condition of life and evolution. Our growing ignorance, determined by the growth of our knowledge which increases the number of unanswered questions, is the best evidence that we are part of the flow of life.

Experience tells us that whenever we have the feeling of having completely mastered and understood a problem, it is often because the object or the situation of reference no longer exists: we are just about to discover that our confidence in our capacity to “totally” understand is normally misplaced. Normal life is not so different from the process of scientific thinking. Hypotheses are emitted and tested; they may work for a while until at some point something ceases to fit into our picture. We then have to readapt, rethink and reformulate our ideas, understanding and theories in a broader or different framework.

In the words of Ilya Prigogine:

“The views of evolutionary changes as a dialogue between “randomness” and “deterministic selection” is at least as old as Darwin; but in the views developed here, the randomness results partly from the ignorance of the actors concerning the system as a whole, a lack of knowledge which allows the exploration of new ideas that give rise to creative reorganization.”

Ignorance is there to be continuously challenged and reduced, but its very existence enables us to discover and create; in short, to develop ourselves.

Notes

1. Ronald Clark, *Einstein: sa vie et son époque* (Paris: Stock, 1980).
2. Kenneth Arrow, “New Developments in field Theory of Risk Allocation,” *The Geneva Papers on Risk and Insurance* 3, no. 8 (1978).
3. Karl Popper, *Unended Quest* (Glasgow: Fontana Collins, 1977), 86.
4. Walter Weisskopf, “Reflections on Uncertainty in Economics,” *The Geneva Papers on Risk and Insurance* 9, no. 4 (1984).
5. Morris Kline, *Mathematics: the Loss of Certainty* (Oxford: Oxford University Press, 1980).
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7. David Bohm, *Wholeness and the Implicate Order* (London: Routledge & Keenan, 1980).
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Human Rights, Liberty & Socio-Economic Justice: Economic Theory and the Ascent of Private Property Values

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1. Introduction

In the Introduction to the first issue of *CADMUS*, Ivo Šlaus and Garry Jacobs essentially provide us with a reminder that the founders of modern economics were also important moral philosophers. In particular, Adam Smith would appear to be influenced by the idea that economics has a great deal to do with human well-being. His theory was meant to be a tool to better understand economics for the improvement of the human condition. Certainly in the case of Smith, the idea of supply and demand represented an allocation of competence in society over economic activity that was designed to empower both suppliers and demanders of economic goods and services. As a thought construct there is a great deal that is appealing in the idea that the supplier is serving the demander and that the demander may rely on the supplier to supply. However, if the supplier is a laborer and the demander is an employer and there is a surplus of labor, the employer may drive the price of labor down dramatically with severe impacts on the status of labor in society. If the demander of labor is a technologically modernizing enterprise he may create a glut in the labor market by replacing labor with machines. Thus, important as the allocation of competence is to economic participants, it cannot cure the imperfections in the distribution of the benefits of the market. Significant injustices may obscure, if inquiry is abstracted from social reality and focused exclusively on idealized economic constructions such as the perfections and equilibrium of an idealized market. Smith emerged from the intellectual and moral revolution identified with the Scottish Enlightenment.* The leading figures in the Scottish Enlightenment were influenced by its important moral philosophers.^{†1} One of the current concerns is how professionally economics has developed in the context of Smith and the other classicists, and somehow appeared to sideline the moral sensibility and motivation that drove them. Part of the answer is that Smith may have been too successful and economics became a very discrete discipline under the influence of 19th Century positivism. And positivism sought to preclude the contamination of the new science from moral sensitivity.

To provide a contemporary example of the problem we may look at the conceptual foundations of Posner's economic analysis of law.^{2,3,4} Posner posits wealth maximization as a

* Adam Smith's (1723–1790) *The Wealth of Nations* was the first modern treatise on economics.

† Francis Hutcheson held a chair of moral philosopher at the University of Glasgow and he taught Adam Smith.

defensible value foundation of his approach. If we put his approach into the reality of social process, it could be described as human beings pursuing wealth through institutions based on resources. In this view wealth has a preferred value and is probably supported by moral analyses and justifications. However, the scope of law and economics may be limited by the focus on wealth to the exclusion of other indicators of human well-being that realism requires we acknowledge. In short, social process may be described as human beings pursuing all the values relevant to a culture of human rights and dignity. Posner's model would, of course, preclude this from the enquirer's legitimate concern. In short, the narrow focus short changes a proper consideration of important moral and value factors. For example, the social process model may see the individual as pursuing more than wealth. An individual may be pursuing power, respect, skill, well-being, enlightenment, affection, rectitude. Posner's model will not account for these other values and in this sense morality is depreciated. We should note a person may pursue wealth to get more wealth. The person could also use every other value listed above to achieve more wealth outcomes. And what may be obscured is that wealth may be used to acquire a share of all the other values. In short, wealth may be used to leverage power, respect, skill and the other values. Understanding the moral and value implications of political economy requires that we go back to reinvent the moral motivations of the classical economists. In this approach the entire culture of modern human rights is obscured or ignored. The idea of political economy as a measure of social justice and social justice deficits does not quite grab the attention of high powered figures in the field.

The great depression provided a serious challenge to the failures of Free Market Capitalism. There was a widespread recognition, politically, that choices had a great deal to do with getting the world into a depression. Therefore, a remedy to depression choices would be better choices that explicitly accounted for the public interest. This suggested a broader role for public sector decision-making and regulation to moderate the worst aspects of the depression and to generate policies and initiatives to stimulate an economic recovery. This approach to economics came under the label "The New Deal". Powerful forces resisted the New Deal. The rhetoric remains curiously static. In the 1930s the right wing railed against public expenditure and investments on the basis that public borrowing increases the public debt and mortgages the prosperity of future generations. This is the rhetoric still expressed today in the current recession in the US. During the New Deal the practical governing side of political economy found itself stumbling into the moral perspectives of classic economists. These moral ideas stressed the importance of political economy for the common good and well-being of all the stakeholders in the political process.

In grappling with these issues the New Deal practitioners generated a powerful insight of great ideological importance about the nature and the scope of human liberty. Their insight was that human liberty was not only a liberty for the economic elite but rather a liberty for all social participants. The concentration of wealth in the few enormously maximizes the liberty of the few. On the other hand the majority, including the poor, the unemployed and the disadvantaged and who otherwise suffer the deprivation of human necessity would really seriously be deprived of liberty: necessitous human beings are un-free. The critical challenge of new deal economic choices was in reality the challenge of expansion and fair distribution of human freedom. Therefore theory and method in economics had to confront the choice between liberty for the few and liberty for the many. The economic crisis of the

1930s was also therefore a crisis of human freedom that had directly impacted on human welfare and human dignity. In this essay we provide a short overview to the economic crisis of the 1930s including an indication of what Roosevelt and his advisers learned from that experience. Crucial to Roosevelt's education was the brilliant formulation of the war time goals for the United States and the world community. Characteristically it was expressed in terms of broadening the foundations of freedom. The four freedoms which included freedom from fear, want, as well as freedom of conscience and belief and freedom of speech and association, were values that Roosevelt said were not for a distant millennium, but were definitely achievable in our lifetime. These freedoms became the cornerstone of the UN Charter, the International Bill of Rights and a foundation for the UN's economic justice initiatives expressed in the United Nations Millennium Development Goals.

2. New Deal Influence on Freedom and Liberty

The depression meant oppression for the poor. The concern for the oppression of the poor has its roots in a multitude of religious traditions, and finds expression in philosophical and political theory, such as the works of Marx and Engels, Kant and Rawls, Sen and Dworkin, as well as McDougal and Lasswell. The enhancement of socio-economic rights into the discourse of liberty and world order owes a great deal to Eleanor and Franklin Roosevelt.

The currency of contemporary human rights finds its boundaries in the Four Freedoms proclaimed by President Roosevelt to the Congress of the United States and later included into the text of the Atlantic Charter agreed to by Churchill and Roosevelt. The Atlantic Charter reflected the war aims of the allies. It expressed in simple but telling terms the idea "of why we fight." The Four Freedoms could be generalized in terms of the critical importance to human survival and human welfare and the idea of security. Thus, the Four Freedoms spell out four different dimensions of the critical importance of security to human values. The Four Freedoms include the freedom from fear which is the freedom from aggression and the protection of the right to peace; the freedom of speech and expression which is the freedom of political security; the freedom of conscience and belief which is the freedom to be secure in one's fundamental perspectives of belief. Finally, there is the freedom from want, which is the security for material survival and well-being of the person. The central importance of the Four Freedoms is that they served as an inspiration for the goals and purposes of the UN Charter. They also inspired the development of an international bill of human rights. Thus the boundaries of the security interests would evolve in widespread ways and impact global values in important future directions. The freedom that this chapter focuses on is the freedom from want. This freedom encapsulates the importance of socio-economic values to human welfare and therefore reflects a concern for the salience of social justice as a global human rights imperative.

President Roosevelt was elected at a time when the United States was facing the worst economic crisis in its history. The economic system was on the verge of collapse and he considered the widespread effects on employment and poverty to be a national crisis. The administration of Roosevelt experimented with governmental initiatives to revive the American economy and to explore policies that would alleviate the economic suffering experienced by millions of Americans who were victims of the depression. In this sense, the administration determined that there was a crucial role for the government in developing

and implementing policies to alleviate the material suffering of millions of Americans who suffered economic deprivation. Economic deprivation meant that millions of people were deprived of essential wants necessary for material survival. According to Roosevelt economic laws which dictated poverty were not “sacred, inviolable, unchangeable.” He stressed that “economic laws are not made by nature. They are made by human beings.” Roosevelt explained the problem that inspired his freedom from want— war aim. “In this nation I see tens of millions of its citizens—a substantial part of the whole population—who at this very moment are denied the greater part of what the very lowest standards of today call the necessities of life... I see millions denied education, recreation and the opportunity to better their lot and the lot of their children. I see millions lacking the means to buy products of farm and factory and by their poverty denying work and productiveness to many other millions. I see one-third of a nation ill-housed, ill-clad and ill-nourished.” Roosevelt saw such extreme material deprivation as also a deprivation on that most cherished of American values, the concept of liberty. In short, material deprivation made American citizens un-free. According to Roosevelt, “necessitous men are not free.” Roosevelt genuinely believed that there would be a need for constitutional change for the purpose of creating a bill of socio-economic rights which would have constitutional stature and would be an essential safeguard to the freedom of the American citizen. In 1943 the Public Resources Board began working on a draft of a Bill of Socio-Economic Rights which Roosevelt approved. The preliminary draft was submitted to Congress. The rights enumerated in the draft took the following form:

- The right to work, usefully and creatively through the productive years;
- The right to fair play, adequate to command the necessities and amenities of life in exchange for work, ideas, thrift and other socially valuable services;
- The right to adequate food, clothing, shelter and medical care;
- The right to security, with freedom from fear of old age, want, dependency, sickness, unemployment and accident;
- The right to live in a system of free enterprise, free from compulsory labor, irresponsible state power, arbitrary public authority and unregulated monopolies;
- The right to come and go, to speak or to be silent, free from the spying of secret political police;
- The right to equality before the law, with equal access to justice in fact;
- The right to education, for work, for citizenship and for personal growth and happiness; and
- The right to rest, recreation and adventure, the opportunity to enjoy life and take part in advancing civilization.

Roosevelt’s belief in freedom and the importance of socio-economic rights in strengthening human freedom he believed was more than a matter of national American politics. The Four Freedoms thus were not “a vision for a distant millennium. It is a definite basis for the kind of world attainable in our time and generation.” He compared this to “the new so-called order of tyranny which dictators seek to create with a crash of a bomb.” He seemed to appreciate that

there was something revolutionary in the Four Freedoms. He justified it as follows: “Since the beginning of our American history, we have been engaged in change—in a perpetual peaceful revolution—a revolution which goes on steadily, quietly adjusting itself to changing conditions—without the concentration camp or the quicklime ditch.” In substantial measure, the goal of the Four Freedoms was to defeat “Hitlerism in the world forever.” Clearly, the New Deal experience of President Roosevelt reflected the values that explained to the American people why they were engaged in the wars against Hitlerism. The idea that the deprivations of poverty were antithetical to both religious experience as well as major commentators on social thought and social justice clearly would have had some influence on Roosevelt and certainly influenced the development of human rights in the post war period.

The boundaries of Roosevelt’s Four Freedoms included a wide vista of human rights interests. One of the critical questions now is—what exactly is the status of the human rights in implicating socio-economic justice? Some views have sought to distinguish them by suggesting that human rights represent discrete clusters of interests that are dependent on each other for efficacy. Thus, it is urged that the first generation of human rights are essentially civil and political rights. That a society must establish the culture of these rights before it can aspire to the rights of the next generation which are socio-economic and the aspiration to realize collective rights to peace and environmental integrity cannot be realized until first and second generation rights are realized. An innovative conceptualization of the International Bill of Rights suggests that all the rights are interdependent and underdetermining in the realization of the entire human rights agenda.

In his 1941 Atlantic Charter iteration, Roosevelt specifically included the freedom from want in the four freedoms that were the basis and justification for the war. In his 1944 State of the Union Address, he challenged the notion that true individual freedom could exist without economic security and independence: “Necessitous men are not free men.” He went on to suggest that unemployment often became a strut for the creation of dictatorships. He spoke specifically about the practical acceptance of a “second Bill of Rights” under which a new base of security and prosperity could be established for all. Among the specific rights mentioned in that speech were the right to employment, adequate food, clothing, recreation, the right of every family to a decent home, adequate medical care, the right to social security, employment and a good education. According to Roosevelt, all these rights “spell security.” Roosevelt saw the post war period as an opportunity to move toward the implementation of these rights and establish “new goals for human happiness and well-being” along the way. Eleanor Roosevelt was given the task of organizing a draft of the Universal Declaration of Human Rights and, as a result of her involvement, the U.S. Delegation offered strong support for the inclusion of economic and social rights. Later presidential administrations, however, would reverse the official policy of the U.S. toward the concept of economic and social rights, despite a concurrent acknowledgment of “the urgency and moral seriousness of the need to eliminate starvation and poverty from the world.” The justification centered around the fear that repressive governments too easily abused the idea of economic and social rights, at once claiming to promote human rights while simultaneously “deny[ing] their citizens the basic civil and political rights.”

Since 1948, when the Universal Declaration was adopted as a General Assembly Resolution of the UN, the UDHR came to constitute a major part of international relations

and international law. This resolution was originally adopted as an instrument of *political* obligation; and its ongoing development as a legal instrument reveals the somewhat limited nature of its legal character. At its creation, the UDHR was not considered to be a legal instrument imposing binding obligations on states. (In this sense, the UDHR hardly reflected the commonly accepted notion of a ‘law’— a rule-based prescription and prohibition of behaviors, with its adherents and enforcers.) The subsequent development of the culture of human rights into the realm of law mirrored the development of human rights instruments as international treaties imposing binding obligations on states. Clearly, the UDHR’s political message and the political morality implicit in the articulation of the “rights” in this instrument, had a sturdy shelf life, reflected in the considerable global consensus that those rights should be transformed into instruments of juridical importance. The political moral status of the Universal Declaration was converted into a regime of complex treaty obligations incorporating concerns for socio-economic justice.

3. Human Rights, Political Economy and Development

In this section we introduce some of the elements that have contributed to the current recession. At the back of the recession are choices made which have facilitated greed. These choices are sustained by the economic theories of neo-liberal political economy associated with the Mont Pelerin group. Extremists from this perspective campaign for a non-regulatory state. Regulation, they believe, diminishes freedom. We also refer to the philosopher Polanyi who explains the importance of regulatory standards for increasing the quantum of freedom for the individual.

3.1 The Relevance of National Economies

The viability of a state’s political economy is a critical condition for the promise of human rights therein. It is commonly accepted that we live in a world in which the sovereignty of a state and its borders are increasingly porous, conditioned by the forces of globalization. Within these forces economic indicators loom large. We also currently confront one of the downsides of the political economy of globalization: a global recession. Commentators maintain that the crash of the financial markets occurred in large part because the major institutional players behind them were able to exploit a zone of no regulation. In other words, the state became a bystander to the dynamics of the financial markets. The prime players were making money under the sole directive of self-interest. The agenda of self-interest precluded self-regulation and was abetted by the concurrent lack of state regulation. This recession may endure for some time and it is not clear how it will ultimately impact the human rights expectations of the world community.

The current recession is an outcome of a change in the way wealth is exponentially generated in the national economy of the United States as well as the global reach of its economic style and practices. Broadly speaking, the crisis is a financial one and is reflective of the dynamism of the financial sector in the economy. That dynamism was partly facilitated by a regime of non-regulation in the United States that was even more accentuated in the global context. That regime was deeply influenced by the ideology of neo-liberalism as an organizing perspective of economic decision making. Neo-liberalism became a critical ideological strut for the ascendancy of financial mechanisms as driving the accretion of

wealth. Additionally, the financial mechanisms were facilitated by ingenious ways in which property interest and securities could be invented or created. This gave dynamism to the financial markets as these new instruments became a cornerstone for market trading. Non-regulation permitted the generation of new forms of property. Laws which gave a high priority to the protection of private property ensured the insulation of these innovations from regulation and accountability.

The process by which paper assets could be manipulated and marketed essentially resulted in a ton of paper assets generated by new financial instrumentalities such as derivatives. This made for a huge gap between finance capital and capital generated by the real economy. The securitization, bundling and marketing of mortgage obligations and the growth of sub-prime lending in this regard accelerated the gap between finance capital and the real economy. This gap proved to be unsustainable and the financial bubble burst, creating a major economic crisis in the economy of the United States and other leading economic powers. The financial sector remains a backbone of the real economy and the collapse of the financial market impacted upon the viability of the real economy. Thus, the recession impacted on the global political economy of all states with resultant impacts for socio-economic justice. When national economies struggle, that struggle is reflected in the depreciation of living standards.

3.2 Market Theory and Regulation

To put these developments into a broader context of governance perspectives, it is important to recognize that the UN system inspired by the four freedoms which were in turn influenced by the New Deal, had developed a greater confidence in the role of government in moderating the negative effects of free market capitalism. In this sense the role of governance and regulation was at least implicitly apparent in setting up a global mechanism of limited but important global normative guidance in the form of the UN. When Roosevelt expressed the war aims of the allies in terms of the four freedoms, he was also expressing those aims of a social democratic form of governance which as a global matter was engaged in a war with totalitarianism. In the totalitarian state, the assumption of omnipotent powers could be seen as powers which extinguish freedom.

In 1944, the scholar Karl Polanyi provided a critical meditation on the role of governance and regulation in the context of human freedom. He distinguished two kinds of freedom: a form of good freedom, and the other a form of bad freedom. Bad freedom involved the freedom to exploit others. The freedom to take disproportionate benefits without commensurate service to the community, the freedom to appropriate technological invention without use for public benefit and the freedom to exploit social disaster for private benefit. With regard to the good side of freedom, Polanyi stated "The market economy under which these freedoms thrive also produced freedoms we prize highly; Freedom of conscience, freedom of speech, freedom of meeting, freedom of association, freedom to choose one's own job." These freedoms are the product of the conditions that also give us the bad freedoms. Polanyi speculated, interestingly, on a post market economy and its capacity to enhance freedom. According to Polanyi, the passing of the market economy can become the beginning of an era of unprecedented freedom. Juridical and actual freedom can be made wider and more general than ever before; regulation and control can achieve freedom not only for the few, but for all. Freedom is not an appurtenance of privilege, tainted at the source, but as a prescriptive

right extending far beyond the narrow confines of the political sphere into the intimate organization of society itself. Thus will old freedoms and civic rights be added to the fund of new freedoms generated by the leisure and security that industrial society offers to all. Such a society can afford to be both just and free.

Polanyi also noted that an important impediment to such a future was the moral obstacle of liberal utopianism. He refers to Hayek as a key figure in this area. According to Polanyi, "Planning and control are being attacked as a denial of freedom. Free enterprise and private ownership are declared to be essentials of freedom. No society built on other foundations is said to deserve to be called free. The freedom that regulation creates is denounced as unfreedom; the justice, liberty and welfare are decried as a camouflage of slavery."^{5, 6}

Polanyi's view of neo-liberalism is that it is doomed. It has the seed of authoritarianism and fascism. Thus, the good freedoms are destroyed and the bad ones are ascended. Polanyi's view of good and bad freedom and the role of the state in maximizing the good and minimizing the bad is an important insight into the modern industrial state influenced by social democratic political principles. It is very consistent with Roosevelt's view that severe economic deprivation and poverty diminishes the freedom of the person deprived. Polanyi's view is that the disparities between the elite rich and the deprived poor are moderated by regulation which has the consequence of enhancing good freedom and moderating bad freedom. Thus, regulation in this view is not an oppressive state-centered invention but part of the complex process of using the state to manage power in ways that enhance the aggregate position of the individual in terms of equality and freedom. This idea is reflected internationally in the International Bill of Rights. The development of human rights codes, regulations and practices are not instruments of repression but instruments that enhance human freedom and liberation. In this sense, the UN Charter and Roosevelt's four freedoms reflect social democratic ideology about the values which guide and animate governance and regulation at the international level as well.

It was probably the implications of social democratic ideology and values that gave significant impetus to the development of an alternative ideological perspective: neo-liberalism. Neo-liberalism was essentially meant to provide a solution to the problems of capitalist political economy. But it would do so in ways that were antithetical to the modern New Deal style state. In 1947, a group of influential academics met in Switzerland in a town called Mont Pelerin. There they formed the Mont Pelerin Society and formulated a founding document which would serve as a guide to its members. Those who attended the meeting included the Austrian political philosopher, Friedrich von Hayek, Milton Friedman and the philosopher, Karl Popper. The founding document explains the problem of modern political economy as seen through the lens of a neo-liberal philosophical perspective: The central values of civilization are in danger. Over large stretches of the earth's surface the essential conditions of human dignity and freedom have already disappeared. In others they are under constant menace from the development of current tendencies of policy. The position of the individual and the voluntary group are progressively undermined by the extensions of arbitrary power. Even that most precious possession of Western Man, freedom of thought and expression, is threatened by the spread of creeds which, claiming the privilege of tolerance when in the position of a minority, seek only to establish a position of power in which they can suppress and obliterate all views but their own.

The group holds that these developments have been fostered by the growth of a new history which denies all absolute moral standards and by the growth of theories which question the desirability of the rule of law. It holds further that they have been fostered by a decline of belief in private property and the competitive market; for without the diffused power and initiative associated with these institutions it is difficult to imagine a society in which freedom may be effectively preserved.

They firmly believed that self-interested greed in the market would be moderated by the invisible hand in market institutions that would generate benefits for all. In this sense, the invisible hand was one of the elements in neo-liberalism that stood in stark contrast to state interventionist theories inspired by John Maynard Keynes. In the context of post war policies governments were still committed to various versions of Keynesian economics to manage the ups and downs of the business cycle. The founding statement was an especially skilful draft in its effort to pre-empt the foundations of freedom, human dignity and the rule of law. Central to the privatizing of the political economy would be the institutions of private law themselves. These institutions reflected the notion of strong protections of private property by law. They also reflected a critical reliance on the stability and efficacy, if not primacy of contractual undertakings. To the extent that the economy was subject to legal regulation, it was legal regulation anchored in institutions of private property and the security of title as well as the rules generated in the market relating to the terms and conditions of enforceable exchanges.

The emergence of neo-liberalism as a dominating global ideology from its modest beginnings in Switzerland is in itself a remarkable narrative of the power of ideas and the ability to disseminate them. Two institutions besides Mont Pelerin of importance were think tanks which were generously supported by private sector capital. These were London based Institute of Economic Affairs and in the US (Washington), the Heritage Foundation. These institutions provided a regular flow of critical appraisal of economic policy. Additionally, in 1974, the neo-liberal perspective gained considerable respectability when Hayek received the Nobel Prize in economics. Two years later, Milton Friedman received the Nobel Prize as well. Thus, neo-liberalism was fed by the power of well-financed, critically placed think tanks together with the validation given by two Nobel prizes.

There was the emergence of two critical leaders on the international stage. The first was Margaret Thatcher who was elected Prime Minister of the UK. She had a strong mandate to reform the ailing British economy and she generated an economic revolution based on the privatization of public enterprises diminishing the entitlements of the welfare state, reducing taxes, and creating a favorable business climate which induced foreign investment. Thatcher's approach to the implementation of the neo-liberal economy was revolutionary. She described economics as the method, but the objective was effectually to change the soul of the individuals comprising the body politic.

3.3 Neo-Liberal Values in the United States

In the US, it is commonly thought that Ronald Reagan led the charge for the drift in the US economy toward neo-liberal values. However, just prior to Reagan coming into power, Paul Volcker, Chairman of the US Federal Reserve, organized a major change in US

monetary policy. It was an approach which effectually undermined key tenets of the New Deal. Central to Volcker's objective was to bring inflation under control even if it meant high unemployment. When Reagan came into power his advisors intuitively liked Volcker's monetarist initiatives for the ailing US economy and he was reappointed by Reagan. Reagan then provided the political muscle for massive deregulation, tax cuts, tax on union power and more. These developments were sufficiently far reaching in the UK and the US that the Labour government of Tony Blair and the democratic administration of Bill Clinton were basically conducting economic policy within the doctrines of neo-liberalism. What is important is that the ideology of neo-liberalism influenced institutions critical to the global political economy like the IMF and the World Bank. What is central to the construction of freedom and human dignity in the neo-liberal view is radically divorced from the policies of government intervention to promote social justice. In this sense, the New Deal human rights framework that covers economic, social, and cultural rights does not have a preferred placement in the structure and process of neo-liberal governance. For example, the millennium goals—developed by the UN and based explicitly on the promise and mandate of the four freedoms—do not figure into the discourse of neo-liberal political economy.

3.4 The Current Financial Crisis

At least at a superficial level there is a consensus that the current financial crisis which has threatened the economic foundations of the global economy is partly the result of the deregulation of the financial sector. This means that the financial sector would essentially be driven by the self-interest of financial leaders unconstrained and unguided by effective regulatory values. Consequently, the leaders had vast powers of entrepreneurial freedom; and, without a regulatory scheme sanctioned by law the only limits on their decision-making competence (driven by self-interest) would be whether there are moral standards of good judgment that should as well have served as an instrument of decision making guidance and constraint. Some scholars argue that the self-interest was in fact fuelled by moral heuristic principles. Thus, self-interest could have been fed by the assumption that since everyone was acting in terms of expanded risk such decision making was appropriate; a kind of bandwagon prejudice. Another justification for high risk decision making could have been the assumption that it was morally appropriate and right and must be assessed according to consequences. This means that if your high risk pays off it is not wrong. Similarly, wrongfulness only attaches to failure. This is described as an ornamental heuristic. A further limitation on the self-appraisal of high risk conduct in decisions relies on a certain amnesia and therefore incomplete data about past failures. Whether the market implicit in neo-liberalism conspires to limit the focus of appropriate decision-making inquiry may also suggest that such limitations undermine the possibility of identification in terms of solidarity, empathy, and (more generally) the mandate of altruism. It is possible that the model of thinking required for success is so limited by the boundaries of self-interest that the construction of freedom and dignity rather than being enhanced is in fact disparaged.

However, prior to the global financial crisis we could distil important outcomes of the state of the world's political economy. We could anticipate both negative consequences—like global economic apartheid⁷—as well as positive—like the human right to development or development as a gift of the planet's economically dominant actors.⁸ We could foresee

the promise of opposing points of view as well, such as the propensity of global economic institutions to vindicate the interests of the powerful over the interest of the powerless: free trade versus fair trade.* We could predict significant issues to come, including the protection of the environment, global warming; and the undermining of global understandings regarding the balance between sustainable development and the destruction of the environment.⁹ We could project threatening outcomes to arise from these circumstances, and anticipate issues like the global capacity to respond to natural catastrophes (i.e., tsunamis, earthquakes, hurricanes).¹⁰ Other foreseen looming dangers included the growth of the human population; the capacity of the earth to maintain human populations within the eco-social and economic capacity of the earth; the global health crisis (AIDS, malaria, bird flu, resurgence of TB, etc.);^{11,12,13,14} and the crisis regarding the respect for human rights and humanitarian values.^{15,16,17,18} This crisis was foreseen to develop at all social levels, as reflected in the crisis of the global war system,^{19,20} the acceleration of the global arms market at all levels, the proliferation and ostensible deregulation of nuclear arsenals as well as biological and chemical weapons of mass destruction²¹ and the growth of civil society deviance, which threatens the world order in the form of apocalyptic terrorism, state terrorism, organized crime, trafficking in human beings, drugs, small arms, and, possibly, criminal trading in the components of weapons of mass destruction.²²

3.5 The Role of Post-Colonial Sovereignty in A Regulatory Nation-State vs. Neo-Liberal Economic Policy in A Non-regulatory Globalized Environment

The unfinished and contested structure of normative priority for international economic order and social justice reflects the clash of two important, but critical, ideological perspectives associated with the original North/South divide. The U.N. General Assembly Resolution on Permanent Sovereignty over Natural Resources articulated a link between state sovereignty and the sovereign's right and obligation to vest a stronger form of property entitlement in the state itself.²³ The Resolution formulated the principle of a state's right to permanent sovereignty over its natural resources and touched on critical, practical and ideological interests. For example, in justifying the state's power to control and expropriate property, the Resolutions targeted the economic legacy of colonialism.

The Resolution on Permanent Sovereignty was a significant effort to change the economic expectations of the colonial era.[†] It also was a critical step in dissolving colonial claims and transitioning the colonized people toward independence. By promoting traditional market-driven concepts of state appropriation of property at the expense of colonialism, the Resolution weakened the protection of the right to property in the international environment. That is, by emphasizing state goals regarding property over individual/community goals, the preference removed individual/community proprietary rights from the human rights discussion.

Meanwhile, the supporters of the new international economic order forged ahead with an important U.N. initiative: the Charter on the Economic Rights and Duties of States.[‡] The Charter subsequently was followed by the Declaration on the Right to Development.²⁴ These instruments forged two principal expectations about the conflicts in international economic

* See Ravi Batra, *The Myth of Free Trade: The Pooring of America* (1996).

† See Resolution on the Permanent Sovereignty, *supra*.

‡ See Charter on Economic Rights and Duties of States G.A. Res. 29/3281, U.N. Doc. A/RES/29/3281 (Dec. 12, 1979).

order. The Charter and the Declaration vested a great deal of developmental power in newly freed states. The economic model, apparently incorporated into this state-central ideology, implied a form of creeping socialism.

The principle behind the Declaration on the Right to Development included the idea of sharing economic and technical resources to benefit the new states.²⁵ The United Nations promoted the principle of sharing as a mandatory (rather than a discretionary) obligation to sustain global equity. It is clear that this evolving international law was confronting two radically contentious ideological perspectives. The first would center on the promise of protecting property in the international environment. The protection of property would be a marker of a state's commitment to a paradigm sympathetic to the global private sector rather than the national or global public sector. The second perspective is associated with the perspectives of international socialists or social democratic ideology. It recognized that the public should control all economic development or that the public shares in the management of the production and distribution of wealth and related values.

3.6 Efficiency and Legality in the New Economy

The contemporary state of the global economy witnessed the ascent of the privatization of national and global economic institutions. It also witnessed emerging market economies, free trade zones, and the dominant role of corporate enterprise. The mantra of the free trade market phenomena has been world peace through world trade.* The ascent of the private sector is considered to be more efficient and less wasteful than corrupt and inefficient state bureaucracies. A central element of the neo-liberal view is the weight given to the idea of private property and the strength of its defense in the private law institutions of property.

The global institutionalization reflected these developments (the legal and political cultures of the WTO, the IMF, and the World Bank). To some degree, they came at the expense of working through the development agencies of the United Nations. However, a significant policy shift had emerged in the global economy, reflected in the emergence of a coalition of economically dominant states, the Group of Eight. From a technical point of view, the international economic soft law associated with the new international economic order has become even softer.

On the other hand, it is unclear what the general emerging rules are that govern the neo-liberal economy. The institutions of this perspective have been under pressure in part because the *lex specialis* within these institutions is sometimes incompatible with general international law and international human rights law. Moreover, critical appraisal of many of the operational rules often shows that the rules are enforced strictly against the powerless and often ignored by the powerful. Moreover, the efficiency of the model is under critical examination because the outcomes seem to generate greater global disparity and greater global alienation, and some would even suggest, the radical division between rich and poor may be a cause of radical religious activism or possibly even apocalyptic terrorism. Catastrophic natural events such as the tsunami in Southeast Asia, Hurricane Katrina in the United States, and the recent earthquake in Pakistan raise the question whether the global

* Lawyer Roles, *supra*, at 134. "The world peace through world trade movements, spearheaded by the Trilateral Commission, envisaged a global world order under the direction of the captains of corporate monopoly efficiency, a vision which comprises a diffuse human rights agenda focusing on the role of NGO's and an enhanced role for the corporate side of civil society." *Id.*

collective responses to these natural tragedies are a matter of beneficence and altruism or whether the responses themselves simply generate tacit but important expectations of international soft law obligation.

In Africa, the high intensity violent conflicts in many parts of the continent, particularly in the Sudan, the horn of Africa, Sierra Leone and the Democratic Republic of the Congo, also raise concerns about the protection of global peace and security as either a matter of discretionary altruism or legal obligation. It may be that constructing a stronger moral foundation for global solidarity in the context of natural or man-made catastrophic crises requires the first step in moral or value justification to be an appeal to the self-interest of the powerful sectors of global society. A compelling argument may be made that the self-interest of the haves in security, economic prosperity, and the health of their populations is better protected when those interests are recognized as of critical importance. When that interest is complemented by the idea of global solidarity and the element of altruism, we may have a stronger basis for the design of progressive policies that ensure a commitment to the deprived parts of humanity. In short, helping the poor actually helps the rich as well.

A good deal of modern economic theory seeks to insulate the market from non-market factors. Altruism may be valued only to the extent that it has market value. In short, altruism standing alone as a moral principle may actually be seen as a marker indicating weakness within the functions of market conditions and corporate culture. The business culture thrives on self-interest. This is a reality. Theory might improve the structure and process of both business and the larger social universe if the meaning of self-interest is defined more broadly to capture the real world of human and economic relations and supplemented by an altruistic gloss to provide a strong justification for broadening the focus and concern of the culture of enterprise.

4. The Human Rights Implications of Political Economy

The conceptualization of human rights in its varied forms has, for the most part, reflected deference to disciplinary orthodoxy. Among the most influential of these traditional notions is the characterization of human rights values as something of a generational step-function. Under this framework, civil and political rights values make up the foundational first-generation human rights. The realization of first-generation human rights is, in turn, a condition for the realization of second-generation human rights—the social justice rights. Finally, the so-called “collective” human rights round out a third generation of rights, realized only upon the attainment of the first two. The right to peace and the manifold environmental rights are prominent examples of third generation human rights. The implication of this generational model was that progress on generations two and three could justifiably be deferred while humanity grappled with generations one and two.

This orthodox model is now largely rejected in favor of one that recognizes human rights values as interdependent. Civil and political rights influence socio-economic rights and vice versa. These rights in turn influence the right to peace and environmental integrity and are, in turn, influenced by these latter values. Perhaps the best and most lucid explanation of the interrelationships of human rights values is found in the Maastricht Guidelines, stipulating that “[i]t is now undisputed that all human rights are indivisible, interdependent, interrelated

and of equal importance for human dignity. Therefore, states are as responsible for violations of economic, social and cultural rights as they are for violations of civil and political rights.” Thus, a view of rights as interdependent still requires us to develop explanatory models indicating the nature and consequences of the interdependence of human rights prescriptions.

5. Human Rights Political Economy: Theories of Justice and Morality

In terms of the socially-based underpinnings of economic theory, Marx and Engels were the leaders in rigorously elaborating the social prescription deploring the expropriation of the surplus value of labor and seeking to provide a more equalitarian form of access to the economic patrimony of the community. In contemporary social theory, philosophers have sought to bring an enlightened normative understanding to this and other value-based economic perspectives.

John Rawls,* for instance, wrote *A Theory of Justice* (1971) inspired by the concern that utilitarianism does not account for a justice that carefully considers the position of individual rights. Rawls directed his critique at utilitarianism’s emphasis on the collective right to happiness without adequately accounting for the distribution of that right to individuals. In faulting utilitarianism for insufficiently addressing the allocation of rights, opportunity, liberties and other important values, Rawls charged the theory of utilitarianism with a principal lack of respect for the distinctive identity of the individual and with a blindness toward the freedom and equality of citizens in a democracy. Rawls made clear that, in the process of prioritizing the greater happiness of the many, the implication of the utilitarian economic approach would be to restrict the rights, opportunities and liberties of the individual.

Like many social philosophers who address the values and exchange of values underlying economic theory, Rawls constructs a thought experiment by which we are directed to reimagine society. With a blank slate about the particular facts involving the thinker and society—but with a sense of the general facts about society and science—the individual thinker is challenged to consider some justice principles to govern society that all can rationally agree upon. According to Rawls, the first principle would be that ‘justice’ must guarantee equal fundamental liberties for all (e.g., equal political rights, freedom of thought/ expression/association/religion, freedom of choice with regard to private property). The second principle of justice would require the allocation of ‘fair equal opportunities’ to develop talent and capacity and permit individuals to compete for desired social positions. (This second principle implies educational and healthcare benefits for all.) Rawls’ third principle—the ‘difference principle’—is a crucial innovation. This principle of justice mandates that any economic inequality must be subject to reallocations in order to provide a maximum benefit for the least advantaged members of society. The implication is that political economy should be driven by the impulse for redistribution of income, wealth, and economic powers and responsibilities, so that the least advantaged class would be better off than it would be in any other system of political economy. In effect, Rawls’ theory of justice is reconcilable with a private property-owning democracy.

In drawing up this intellectual framework, Rawls permits the reality of social and economic inequality to be redefined as ‘just’ only insofar as these inequalities work to the advantage

* John Bordley Rawls (1921-2002) was an American philosopher and a professor at Harvard University.

of the least advantaged people in society. In fact, Rawls would prescribe this unequal distribution to work like two water levels, driving the wheel and producing the energy that motors the economy. The redistributive effect of the third principle moderates the potentially unjust discrepancies of the first and second principles. In such a way, Rawls' theory has reinvigorated the philosophic discourse about the fundamental idea of justice. Given the historic difficulty of making fundamental value commitments and morality an important part of the critical discourse of legal theory (which gives authority to community decisions about regulating rights such as private property), Rawls' effort to generate an objective theory of morality has compelled conventional jurisprudence to more seriously consider not only Rawls' version of justice but also the imperative of the idea of justice *in general* to legal theory and public order. Rawls critically stresses the importance of defining criteria for the rational allocation of important values, in terms that are equitable and that which reasonable people may intuitively find acceptable. Moreover, Rawls provided a critical justification for a society based on social democratic principles and seeking to avoid the social deficits that result from extremes of wealth and poverty. Building upon Rawls' approach, later social philosophers (like the founders of configurative jurisprudence—Lasswell and McDougal²⁶) would go on to develop a theory of decision making that is context-driven to give more precision to the challenge of providing maximum benefit for the least advantaged members of society.

More recently, the Nobel Prize winning economist Amartya Sen²⁷ sought to address the perceived shortcomings of Rawls' view of justice, which does not address more contemporary concerns of *global* justice. Sen's approach is influenced by this commitment to social choice theory,* which has its roots in the mathematical application and insights to social policy generated in revolutionary France. A central issue in social choice theory is the problem of integrating incompatible preferences. In this theory, the effort is made to inform choice by calculating the effects on individual well-being that result from alternative social policies.²⁸ Social choice theory shares a focus with the approach of configurative jurisprudence in that it identifies individual interests and values that are important to human welfare. To the extent that this identification is designed to influence collective social choice, it sets as the task a mathematical method of measuring individual interests and values.

Since the focus of social choice theory is on the individual, it is an approach that should see human problems emerging from the bottom and percolating up to the policy process. This approach implicitly suggests that what are identified are perhaps the problems that individuals generate about the values that they value. However, this is not entirely clear, since the process of rationally integrating these values may not be in terms of an explicitly postulated goal value (such as the realization of human dignity). Of course, one of the most problematic issues in social choice theory is how to choose rationally between competing values. Nevertheless, this theory seeks to provide a method of evaluating different social states (in terms of claims for values) and seeks to resolve value conflicts by constructing meaningful measures of social welfare. It is possible that the ideas of social welfare and social well-being have a function of guiding choice, at least statistically, in the direction of

* Sen's earlier work has been highly influenced by social choice theory; although it is clear that, in the evolution of this work, he has expanded the boundaries of social choice theory. Social choice theory is: the formal study of choices or decisions by groups of people including society. Social choice theory seeks to provide a basis for arriving at collective decisions given peoples' differences in preferences and values. Widespread agreement on social and political policies is relatively rare. In view of widespread disagreement, how can we make sense of the idea that society itself prefers or chooses one alternative over another? Are there any ways to consistently combine different individual opinions and values into a collective choice for society as a whole?

an integrated value norm—namely, well-being. Indeed, it may be that, from the economists' perspective, projecting desired value beyond well-being (so as to include the other principal desired values) represents excessive methodological complexity. Thus, from the perspective of configurative theories of justice, the inquiry would include not only well-being but also power, wealth, respect, skill, affection, enlightenment and rectitude. Still, it is possible to give the concept of well-being a stretched meaning to include all the values that sustain the human rights and human dignity principle.

For a deeper and wider empirical understanding of individual value problems and claims, Sen has suggested a method that may be described as *informational broadening of the focus on contending values*.²⁷ This solution appears to represent a much more explicit and in-depth form of contextuality, in that Sen's informational theory requires value comparisons to be made with a wider range of real data. Sen seeks to look at values in terms of basic needs, basic freedoms, and basic capabilities. These factors enable practitioners to see the actual status of value deprivation and the possibilities of access to value advantages.

The capabilities aspect of Sen's analysis emerged as an approach to welfare economics. Sen was attempting to broaden the scope of discourse of welfare economics in order to encompass a wider range of real values important to opportunity and process freedoms. In collaboration with Nussbaum, Sen identified ten capabilities that they believe should be supported by all democracies. These include capabilities related to life, bodily health, bodily integrity, sense, imagination and thought, emotion, practical reasoning, affiliation, other species, play, control over one's environment.²⁹ This explicit effort to distill capability values may be usefully compared to the eight or nine values identified in the configurative jurisprudential approach. Configurative jurisprudence certainly welcomes the effort to delineate the central capability values, which are globally and cross-culturally important. In configurative jurisprudence, there is a set of values that have both capability and opportunity aspects. However, configurative jurisprudence uses values in two senses. Values are used in normative terms; and values are also used to provide a clear contextual background to the value problems in describing society as it is. Thus, values make scholastic sense—as well as significant social relevance—when theorists connect values to the institutional social and cultural processes of a community. In this way, the value of 'power' is represented in governance institutions; 'wealth' in corporate-type institutions; 'labor' and 'skill' in the organization of unions and guilds; 'affection' in the family; 'health' and 'well-being' in clinics and hospitals; 'rectitude' in churches, temples, and mosques; 'respect' in the structure of social stratification; and 'enlightenment' in schools and universities.

It is not as easy to develop a precise analog of institutions relating to the capability values developed by Sen and Nussbaum. For example, the value 'life' would seem to include (institutionally) the idea of community or society; but this would include too much. 'Bodily health' may include the institutions of healthcare or fitness but it is unclear exactly to which institutions bodily integrity is specialized. Similarly, the values of 'sense', 'imagination', 'thought', 'emotion' and 'practical reasoning' would seem to be ambiguous in terms of whether one is talking about the family, the system of community education, the system of fundamental laws protecting artistic freedom and privacy, or the system of legal and academic freedom. Moreover, it is not easy to develop the institutional mechanisms that Sen has in mind regarding 'play', 'other species of life', and 'environment'—these being such

generalized values they effectively implicate every other value, making their autonomous statuses problematic. Nevertheless, the central challenge is the identification and clarification of the content of justice principles and the development of principles of procedure to give these principles concrete realization in social practice. Here, configurative jurisprudence, with its sensitivity to the general problem that confronts practical lawyers in decision-making context, deals with the problem of grounding value judgments in instances of particular application, and developing a coherent theory and method for the clarification and procedural grounding of such values.^{30, 31}

Like Rawls, Sen engages in a shifting of vantage point in order to theorize the framework for justice. While Sen stresses the issue of capabilities for functioning, he simultaneously indicates caution concerning the accounting for peoples' preferences. He is not looking at preference from the perspective of the person asserting a preference; he is examining those preferences from the perspective of a disengaged observer. Similar to Rawls, Sen suggests that preferences may emerge from mistaken beliefs or which "are adaptations to miserable or coercive circumstances." In this sense, deference to human preferences must be tempered by the perspective of a disengaged observer. However, Sen equips the disengaged observer with a standard by which to measure the imperfections of human preference, permitting the observer to evaluate the weakness in the assertion of such preferences. Sen emphasizes that the observer's tools must be sufficiently sharp to penetrate reality, in order to reduce the inequality as it relates to peoples' capabilities and to stress policies and practices that secure real capability for functioning in an environment of real opportunity.

Sen's capability approach to the study of justice, which includes a focus on freedom, is an important contribution to unpacking the modern discourse of the theory of justice itself. Sen has identified a critical problem, the solution of which requires innovative and perhaps novel thinking methods. Sen's capability approach requires individual thinkers to clarify the specifics (or the specific aspects) of abstract ideas, like liberty and equality; yet these terms are often loaded for the individual and will perhaps obscure more than they actually reveal about a viable and defensible theory of justice. Sen's capability approach to the clarification and grounding of value judgment is an important contribution to the issue of clarifying the specific implications and problems of justice implicated in abstract ideas such as liberty and equality. Of particular importance is Sen's clarification of liberty, which he does in terms of 'freedom' (having an opportunity aspect as well as a process aspect), and Sen's integration of liberty into his capability approach. The central value of his capability approach lies in its elucidation, which is dependent upon an informational focus. This means that capability, in terms of a broader contextual informational focus, provides a more expansive framework for the analysis of justice from a global, cross-cultural perspective. Sen postulates that this approach is more compatible with a global and non-parochial view of the critical discourse about global justice and human rights itself. According to Sen:

Any substantive theory of ethics and political philosophy, particularly any theory of justice, has to choose an informational focus, that is, it has to decide which features of the world we should concentrate on in judging a society and in assessing justice and injustice. It is particularly important, in this context, to have a view as to how an individual's overall advantage is to be assessed; for example, utilitarianism, pioneered by Jeremy Bentham, concentrates on individual happiness or pleasure

(or some other interpretation of individual 'utility') as the best way of assessing how advantaged a person is and how that compares with the advantages of others. Another approach, which can be found in many practical exercises in economics, assesses a person's advantage in terms of his or her income, wealth or resources. These alternatives illustrate the contrast between utility-based and resource-based approaches in contrast with the freedom-based capability approach.

In contrast with the utility-based or resource-based lines of thinking, individual advantage is judged in the capability approach by a person's capability to do things he or she has reason to value. A person's advantage in terms of opportunities is judged to be lower than that of another if she has less capability—less real opportunity—to achieve those things that she has reason to value. The focus here is on the freedom that a person actually has to do this or be that—things that he or she may value doing or being. Obviously, the things we value most are particularly important for us to be able to achieve. [However,] the idea of freedom also respects our being free to determine what we want, what we value and ultimately what we decide to choose. The concept of capability is thus linked closely with the opportunity aspect of freedom, seen in terms of 'comprehensive' opportunities, and not just focusing on what happens at 'culmination'.²⁷

Sen's capability freedom may be considered in light of the values both implicated and found in the Universal Declaration. Sen's capability freedom is apparent in terms of the power process (and the many discriminating particular claims that emerge from this) as well as the claims to all other values implicating freedom of choice (such as wealth, respect, enlightenment, skill, affection, health and well-being, and rectitude). Sen's approach (like that of the configurative thinkers McDougal and Lasswell) requires a deliberate focus on the most comprehensive context from which the problems implicating fundamental values emerge. Sen, by specially emphasizing the process aspects of freedom, is clearly concerned about a discriminating clarification of the content of justice norms—as well as the processes in which these norms can be grounded—in terms of real human beings, regardless of nationality, state, or gender.²⁷ According to Sen:

Both the processes and opportunities can figure in human rights. For the opportunity aspect of freedom, the idea of 'capability'—the real opportunity to achieve valuable functionings—would typically be a good way of formalizing freedoms, but issues related to the process aspect of freedom demand that we go beyond seeing freedoms only in terms of capabilities. A denial of 'due process' in being, say, imprisoned without a proper trial can be the subject matter of human rights—no matter whether the outcome of a fair trial could be expected to be any different or not.²⁷

Most recently, one of the most distinguished jurisprudence scholars of our time, Ronald Dworkin,* has written a book on the theory of justice that elaborates on the interdependent framework of individual and social obligations elemental to the goal of justice. Dworkin makes a critical distinction between ethical issues and moral issues to establish his theory of justice. The ethical issues address "what people should do to live well: what they should aim to be and achieve in their own lives." There is a second kind of issue that flows from this—

* Ronald Dworkin (1931-) is an American philosopher of law, a scholar of constitutional law, and a professor of law and philosophy at University College London. See *Justice for Hedgehogs* (2011).

how people should treat others. This issue, according to Dworkin, involves a moral principle. In Dworkin's view, when an individual answers the *ethical* question, "What does it take for a life to go well?" the individual can then answer the *moral* question, "How should I consider or take into account the lives of others?" Dworkin isolates an ethical principle focusing on the nature of self-respect. Self-respect requires recognition of taking one's own life seriously and understanding what is important to make one's life a successful experience (rather than a 'wasted opportunity'). Dworkin isolates a second principle—one that supports self-respect—that focuses on the experience of authenticity: an individual has the responsibility to identify what counts as success in that individual's life. Dworkin believes that these principles, taken together, generate a concept of human dignity that must be accounted for in any theory (economic or otherwise) of justice.

Dworkin's theory, like the process-focused theories of Sen and configurative jurisprudence, illuminates an element of dynamism in the demand for justice. It is in the nature of human beings that they are transformative in their capacity for growth and in their relations with others. Sen focuses on individuals as transformative agents, having capabilities and needing opportunities. On the other hand, Dworkin insists "we need a statement of what we should take our personal goals to be that fits with and justifies our sense of what obligations and duties and responsibilities we have to others."³² We may read into both of these perspectives the idea that justice requires individual responsibility and effort, that an individual's life "should be a successful performance rather than a wasted opportunity."³³ Dworkin also requires capability and process freedoms, if life is not to be a 'wasted opportunity.' There is a genius in joining opportunity and capability with a responsibility to take one's life seriously as an aspect of both personal and community justice. The idea that each individual has a right to a life of self-respect and authenticity—which must be given operational effect by capability and opportunity freedoms—moves from that of an ethical commitment to that of a moral principle, in the sense that self-respect, authenticity, capability and opportunity freedoms are encapsulated in the universal principle of human dignity. Dynamism is rooted in the responsibility and obligation of the person to respect oneself. Such respect is sustained by the idea that the self is truthful to the self and, therefore, expresses to the self its self-validating authenticity. This means that the subjects of the idea of justice are meant to be active participants in the shaping and sharing of justice and, moreover, to be active participants in the transformational dynamics of the principle of justice.

This brief survey of contemporary ideas of justice shows the relevance of the essential dignity of the individual—enabled and expressed by economic functions within society—to disciplines such as law, politics, economics, social theory and business methods. These developments concerning the general theory of justice provide considerable depth to the moral motivations of the classic economists. These developments in theory of justice may hopefully influence developments in economic theory and choice making, as well as provide a challenge for the development of a new paradigm of political economy that is more intricately tied to the major purpose of economic theory and method—namely, that priority be given to human needs, human well-being, human prosperity, and human dignity.

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Capital Needs Labour

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The past three and a half years have seen a very rough ride for the world's financial markets. Not only did the credit crisis (which The Geneva Association has studied intensively) directly impact the value of many real world assets (especially U.S. real estate) and stock markets with particular bearing on bank stocks, many derivatives and structured financial products; it has also led to a deeper rethinking of how we deal with financial risks and what role the provision of capital plays for the proper functioning of modern economies. In recent days,* the disasters in Japan have triggered further concerns about the available capital stock and its future productivity, bearing heavily on global stock market valuations. Much has been written about overcoming the crisis and (re)positioning those parts of our economic and financial system that suffered most to generate future growth. Unfortunately, less prominent in these discussions are the aspects that relate to an intelligent use of labour in an economic system that is leaving its deterministic origins – dating back to the important work of Adam Smith and the industrial revolution – even further behind it.

Many economies have made great strides to turn themselves into stock market economies. Even nations that until two decades ago had very different traditions have embraced an approach to producing wealth and welfare for their people based on activating capital to a maximum, often resorting to leveraged structures that would allow a greater exploitation of increasingly thinner layers of capital. Faced with historically unprecedented levels of stock market capitalization and a fundamental belief in (if not ever-lasting, at least) ever-returning bull markets (like those seen in the 1990s), only confirmed pessimists or incorrigible killjoys would consider possible sustained crash scenarios seriously. According to the disciples of the new financial age, even the last remaining sceptic must become convinced of the wonders of the new approach: lasting, almost limitless growth, high returns on capital (fuelled by increased leverage), no inflation – an investor's paradise.

If that is the case, where does the issue of labour come in? Under the traditional understanding, capital is supposed to be a complementary production factor to labour. But why work at all, when correctly invested capital is expected to produce returns that lead one to believe in the existence of a new form of perpetual motion? Capital, rather than being the complementary factor of production just mentioned, is now often perceived as an increasingly substitutive one. We are experiencing a new phenomenon in economic theory in the form of the automatic multiplication of capital's productive function. According to this

* The last revision of this article was on 16 March, 2011, just five days into the earthquakes, the tsunamis and the problems with the nuclear reactors and already the world's stock markets are searching for a new equilibrium in the face of a shifting risk landscape.

approach, every stock market investment will be rewarded by a further, self-perpetuating increase. Capital creates more capital - the multiplier effect of compound interest. Labour is becoming increasingly irrelevant and, if one extrapolates this trend, will at some point no longer be necessary to achieve prosperity.

Even if this scenario is clearly exaggerated, its central tenets are present in the current debates about the functionality and organization of our economic systems. Governments everywhere are preparing the financial markets to meet the requirements of global capitalism. The 'new market' has ensured itself a permanent place in the operations of capital procurement and investment. The recent setbacks and the shortcomings made so obvious during the credit crisis and the now following sovereign debt crisis have mainly triggered a reconsideration of the resilience of the current system, but not a thorough questioning of at least some of its fundamental tenets. While one would expect that a near-death experience for the global financial system, such as the one the world witnessed at least once during the crisis, would trigger deeper rethinking, the energy of the leading actors has been targeted at symptoms rather than root causes:

- If "too big to fail" is the problem, why not seriously consider avoiding "too big" in the first place?
- If "too interconnected to fail" is the problem, why not think about reducing interconnections between actors and through various conglomerate structures?
- If "wrong incentives for capital deployment" are the problem, why not try to make the system self-correcting rather than self-exploiting?
- If "inadequate global supervisory structures" are the problem, why not tackle them directly?

It seems that too little of the resources aimed at correcting our economic and financial system is directly trying to solve the underlying setup. And in all of this, the role of labour, which is so crucial not only as a production factor but also for the social cohesion and stability it provides, is being forgotten. Threats to financial stability do not exclusively emanate out of capital markets. As the unrest in several Arab countries demonstrates yet again, without social stability there can be no financial stability. To underestimate the influence and importance of labour would be a serious error. However clear the complementary nature of labour and capital appears to be to the economist, it is often lost on the financial technocrats who are shaping the current discussions about financial stability. Unfortunately, it remains extremely difficult to quantify their relationship and relative importance. Estimates of the human capital of the USA, ranging between 50 and 90 percent of total American capital, thus are not only peculiar (not only due to their high degree of inexactness) but disconcerting as we implicitly admit that we do not know how our wealth is truly produced. Nevertheless one thing is certain: although the status of labour in a society is, to a major extent, determined by its relationship to capital, its role as a monetary factor of production is only of partial significance. It is therefore necessary to identify the various functions of labour:

- The production function: Labour enables people to earn their living. Since the emergence of Homo Oeconomicus against the background of Calvinism and Capitalism,

this particular function has ensured that labour is mainly equated with remunerated employment.

- The allocation function: By using redistribution mechanisms, labour reallocates the resources available to the community. This function has been less comprehensively studied than the production function and analysis has principally focussed on monetary redistribution rather than on the allocation of unremunerated services.
- The solidarity function: The social components of labour further the organization of communities and ensure social cohesion. The exclusion of e.g. the long-term unemployed by and from society provides evidence of the strong correlation between labour and social integration.
- The sense and purpose function: Labour allows people to develop and express the values they believe in - 'we are what we produce/do'. This was an important theme in the report to the Club of Rome: *The Employment Dilemma and the Future of Work* that Orio Giarini and I wrote together.

The focal points of the four functions of labour are shifting. Whereas remunerated labour used to be almost the sole focus of interest, in more recent times labour researchers, economists, philosophers and institutions (for example the Catholic Church in Pope John Paul II's 'Laborem Exercens') have investigated the concept of labour from different viewpoints and attempted to distinguish it from that of remunerated employment.

It is clear that even a comprehensive reorganization of access to capital in our society - for instance in the form of workforce participation in productive capital (an idea which has frequently been advanced in the past and failed almost as often), or the encouragement of the 'cult of equity and leverage' or the use of investment earnings to supplement pensions - cannot replace all the functions of labour. The concept of capital assets as a physical store of value in respect of labour expended which can later be released is an oversimplification. In our money-based economy, capital is an instrument which stimulates human and entrepreneurial activity. The future value of capital is thus strongly correlated with both these factors and is a clear indicator why, ultimately, any future standard of living does not depend on any accumulated (savings, pensions or other) rights, but on the willingness of society to keep activating its productive capacities.

Today we must take into account the increasingly complex processes in the organization of labour and capital, which are evident from the increased demands made on the persons involved and on modern risk management. Each technological advance raises the interaction of labour and capital to a new level, manifesting different risk structures and usually placing greater demands on people and their work. The capital investment required by a pedestrian in order to move around is virtually nil and the worst that can befall him is a sprained ankle. Motor vehicles involving greater capital investment drastically reduce journey time, but their use requires a more qualified type of labour and in the worst case they can kill people. As airplanes attain even higher speeds, the pilots have to undergo extensive training and a crash can cost the lives of several hundred people. However, more complicated demands are not limited to the use of technology, but extend over every stage from planning, design and production to disposal or processing. The application of atomic energy or biotechnology

furnishes more extreme examples of these new structures. The problems in properly harnessing extreme technologies such as nuclear energy generation have become apparent long before the current Fukushima or the earlier Chernobyl disasters.

It is virtually impossible to quantify the interaction of labour and capital in the aforementioned examples realistically enough to allow generally valid (mathematical) production functions to be determined, which also remain fully suitable in the event of large technological and organizational advances. As complexity and capital intensity increase, society faces changes in the organization of work which require not only a more highly qualified workforce, but also people being able to adapt their qualifications to changing circumstances more readily. Existing knowledge must be renewed and updated ever more quickly. In this respect we can talk of an accelerating and regenerative society and economic system.

Society is regenerative, not only because it must ceaselessly bring its knowledge base up to date, but also because organizational forms are generally becoming more 'organic' and thus more sustainable and compatible with each other. Since the Club of Rome's first report on the limits of growth, this realization has gained acceptance in the environmental sector and is now spreading to others: medicine and biotechnology allow us to regenerate our bodies by means of operative and non-operative intervention and to stay active longer, the working world encourages life-long learning and thereby seeks to create the preconditions for the efficient use of an adequately qualified workforce over a longer period of time.

Further, we should not forget that in recent years advances in the techniques of capital management have themselves grown in complexity, being partially responsible for more volatile financial markets and, in consequence, also for the recent crisis. In the creative centres of the financial world in London and New York, the specialists who design, implement and supervise these complicated new financial instruments are called the 'rocket scientists' of finance, thus linking them to those pioneers of space travel entrusted with the responsibility for highly complex processes. The financial debacle that has still not fully released the world from its grip has also shown that Nobel Prize winners of the modern economy can trigger catastrophes in the financial markets, when they make mistakes in their own specialist areas.

Capital instead of labour is utopian – capital needs labour, as much as highly productive labour needs capital. If our attention is currently focussed on the world's stock exchanges and financial markets, this is only the swing of a pendulum looking for the next element capable of bringing another increase in the standard of living. Although we may currently be intent on the possibilities offered by capital, trying desperately to repair the damages done to our markets and introducing new rules and regulation to guarantee proper functioning of financial operations, tomorrow labour will once again dominate the agenda. In the long term, in our society labour will always enjoy a superior status to capital and will exceed its characteristic as a function of production, because labour is characterized by other and more qualities, which capital does not possess.

The monetary value of labour will continue to be based on the interaction of the markets and competition between the supply and demand sides of labour and subject to an imperfect selection process. The social value of labour must however be determined by the society concerned, for labour is more than monetary production.

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Global Prospects for Full Employment *

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Abstract

The recent international financial crisis highlights the crucial role of employment in human welfare and social stability. Access to remunerative employment opportunities is essential for economic security in a market-based economic system. As the rise of democracy compelled nations to extend the voting right to all citizens, employment must be recognized as a fundamental human right. In total defiance of conventional wisdom, since 1950 job growth has outpaced the explosive growth of population, the rapid adoption of labor-saving technologies, the manifold expansion of world trade, and the dramatic shift from manual labor to white collar work. In an increasingly globalized labor market, current nation-centric theories and models of employment need to be replaced with a human-centered global perspective complemented by new indicators that recognize the central and essential contribution of employment to human economic welfare. Employment and economy are subsets of society and their growth is driven by the more fundamental process of social development. A vast array of unmet social needs combined with an enormous reservoir of underutilized social resources – technological, scientific, educational, organizational, cultural and psychological – can be harnessed to dramatically expand employment opportunities and achieve full employment on a global basis. This paper examines the theoretical basis, policy issues and strategies required to eradicate unemployment nationally and globally.

1. Introduction

Mesmerized by the magic of the marketplace and the enormous speed and complex machinery of modern post-industrial economy, we are apt to lose sight of the fact that the most essential function of any economic system is to provide sustainable livelihoods, economic security and maximum welfare to all citizens. We need often to be reminded of what was so apparent and self-evident to economists such as Smith and Ricardo – money, markets, production and growth are merely a means to an end with no essential value other than that of meeting human needs. In Smith's words, "No society can surely be flourishing and happy, of which the greater part of the members are poor and miserable. It is but equity, besides, that they who feed, cloth and lodge the whole body of the people, *should have such a share of the produce of their own labour as to be themselves tolerably well fed, cloathed and lodged.*"¹ In a world of market economies, access to remunerative employment opportunities

* Paper presented at the International Conference on Concerted Strategies for International Development in the 21st Century organized by the Club of Rome in Bern, Switzerland, on November 17-18, 2010.

is the economic equivalent of the right to vote in democracy and must be universally granted. A rapid, sustainable solution to the global employment challenge is imminently feasible, but it requires a new theoretical perspective and more comprehensive practical strategy. Most of all, it requires a radical change in thinking. Our view must change.

Current pessimism regarding the future of work resembles the prevailing mood in the early 1990s, which resulted from the transition of Eastern Europe to market economies following the end of the Cold War, the economic stresses associated with reunification of Germany, and the enormous growth of the labor force in developing countries. During that period 6 million jobs were lost within the European Union and unemployment averaged 11% in 1994. Nearly 22% of youth (aged 20-24) were unemployed.² The employment challenge for developing countries seemed ominously greater. A study by the International Commission on Peace & Food in 1991 estimated that India would need to create a phenomenal 10 million jobs annually during the decade to eliminate unemployment and underemployment and absorb new entrants into the labor force.³ The gloom was aggravated by the financial crisis that paralyzed East Asian economies in 1997, leading to negative growth and widespread job losses. Yet, remarkably, by the early years of the new century, more rapid than anticipated economic recovery in Asia and Europe coupled with buoyant growth in developing countries, particularly China and India, gave rise to a more confident long term prognosis.

The world urgently needs a sound theoretical and practical approach for achieving global full employment. Even before the recent international financial crisis wiped out 34 million jobs globally and pushed an additional 65 million people below the \$1.25 per day poverty threshold, growth of employment opportunities was insufficient to meet the needs and fulfill the aspirations of a large section of humanity. Today UNDP estimates about 1.75 billion people in the 104 countries it measured live in multidimensional poverty.⁴ Of greatest concern has been the inability to generate sufficient job opportunities for new entrants to the workforce. Worldwide, youth represent 25% of the global workforce and 40% of the unemployed.⁵ Labor participation rates for women are still significantly lower than for men. As life expectancy continues to rise, an increasing proportion of the population are able-bodied, experienced people willing and eager for work, but denied the opportunity due to premature retirement or age discrimination. The average unemployment rate among those aged 55-64 in OECD countries declined from 5.3% in 1999 to 4.1% in 2008, then rose following the crisis to 5.7% in 2009.⁶ Social unrest over raising the retirement age in France and rising rural unrest among the unemployed poor in many developing countries, as discussed in the article by Jasjit Singh, illustrate the critical importance of this issue. These facts provide clear evidence that unregulated market mechanisms are not conducive to full employment or optimal human welfare.

2. Transformation of Society and Work: 1800-2000

Employment as we know it today is a relatively recent phenomenon. The past two centuries broke the pattern of agrarian economy that had been dominant since the dawn of agriculture 10,000 years ago. At the time *Wealth of Nations* was written, more than four-fifths of humanity were self-employed or engaged in agriculture. The Industrial Revolution ushered in a period of radical transition. England was the first to make that transition. Employment in agriculture fell from 73% in 1800 to 11% of total employment by 1900, at a time when

agriculture still represented 40% of total employment in France, Germany and USA, and probably as much as 75% globally. Between 1870 and 1970, agricultural employment in the USA declined from 53% to 4.5% of the workforce, yet all these workers and three times as many additional new entrants to the workforce were absorbed in other types of work. By 2000, agricultural employment had declined to 1.4% of the workforce in USA and UK. Globally, agriculture now employs less than 36% of the workforce, down from 65% just 50 years ago and still declining rapidly.

The 20th century brought radical changes in all aspects of human existence. In 1900, only 13% of the world's population lived in cities. The urban population rose to 29% in 1950 and reached 50% in 2010, progressively intensifying the competition for salaried jobs. By 2030, 60% of the world's population will be living in urban areas.⁷

Technological development during the 20th century has transformed the way work is done, vastly reducing or completely eliminating the need for manual labor in many areas, while creating countless new products and services that provide work opportunities of a less physical nature. Although the Industrial Revolution had its origins a century earlier, over the last 100 years and especially the last 50, the impact of rapid technological development has spread throughout the world. Technology has always been regarded as a mixed blessing. Each new advance has raised resistance from those who fear that machines will progressively eliminate the need and therefore the opportunities for gainful employment in manufacturing.

The 50% increase in world trade as a percentage of global GDP following the end of the Cold War has served as an engine for job growth in both industrially advanced and lower-wage developing countries, but resulted in stressful changes in domestic labor markets.⁸ The growth of world trade, aggravated by the increasing disparity between wage levels of the richest and poorest nations, raises similar anxieties today. Computerization and outsourcing have recently added to these concerns by enabling large-scale export of some types of service-related jobs as well.

Most significant of all in its impact has been the explosive growth of population after 1950, which has nearly tripled the world's workforce. Rapid population growth over the last six decades has spawned visions of hundreds of millions of low wage workers in developing countries competing with one another for limited jobs at home and export opportunities abroad. Transformation of the economy, which is at its roots a social transformation fueled by rising aspirations, has irrevocably changed the nature and future of work. Table 1 below depicts the dimensions of that transformation over two centuries.

Adding to these dramatic changes, energy prices have soared more than seven-fold in constant dollars since the mid-1970s, prompting fears that a race for scarce resources imposes impenetrable limits on job growth.*

Rapid technological development combined with explosive population growth, urbanization, globalization of markets and increasingly scarce material resources fuels visions of a future world in which more and more people compete for fewer and fewer jobs. Indeed, it is easy to cite examples in which each of these factors individually and in combination

* Crude oil cost \$9.54 per barrel in 1970 and \$67.70 per barrel in 2007 (in constant 2007 dollars). Compiled by Earth Policy Institute (<http://www.earth-policy.org/>) from US Department of Energy, Energy Information Administration (EIA) at <http://www.eia.doe.gov/>

has resulted in job losses or displaced employment opportunities that appear to justify our worst fears. Conventional wisdom and prevailing belief systems strongly support gloomy predictions of a world without work and severe limits to job growth. Therefore, it is essential that we examine the historical record to confirm or reject this prognosis.

Table 1: Transformation of work and society ⁹

1800	2010
World population 978 million	World population 6.9 billion
3% urban population	50% urban population
Life expectancy 29 years	Life expectancy 67 years
Land-based work	People and society-based work
Manual labor	Mechanized and automated work
85% of global workforce engaged in agriculture	34% of the global workforce engaged in agriculture, 5% in OECD, 2% in UK & US
World trade was 3% of global GDP	World trade is now 27% of global GDP

3. Historical Record: 1950 – 2007

Yet, in spite of this multidimensional coincidence of radical changes, the global economy has been remarkably successful in generating employment opportunities to keep pace with rapid and radical evolutionary changes. The history of the 20th century tells a remarkable story that belies these fears and compels us to re-examine underlying assumptions. Figure 1 depicts global changes in population and employment from 1950 to 2007, just prior to the onset of the financial crisis. During this period a mind-boggling 4.2 billion people were added to the world population, a growth of 164% in less than 60 years. During the same period, total global employment increased 175%, rising from 900 million to 3 billion.^{10,11}

In addition to unprecedented job growth, the last half century has also been a period in which the quality of jobs available worldwide has improved dramatically due to the progressive shift from manual work to mental work, indicated by the falling percentage of the world’s work-force employed in low-wage agricultural jobs. Globally, employment in agriculture declined from 65% in 1950 to 35% in 2009.

This broad historical trend maintained its positive momentum right up to the onset of the current recession. From 1994 to 2009, global population increased by 21%, but total global employment grew by an even faster 27%.¹² Figure 2 shows that the world added 640 million jobs in 15 years, while the employment-to-population ratio (EPR aged 15+) declined slightly as a result of rising levels of tertiary education.¹³ The current global economic recession increased both the magnitude and the urgency of the global employment challenge.

Figure 1. Global trends in population and employment 1950-2007

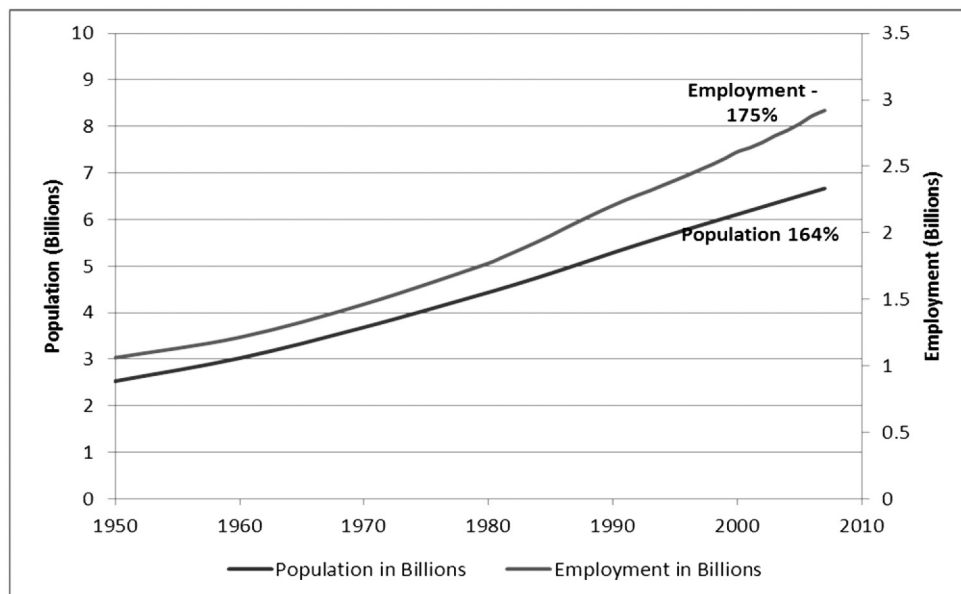
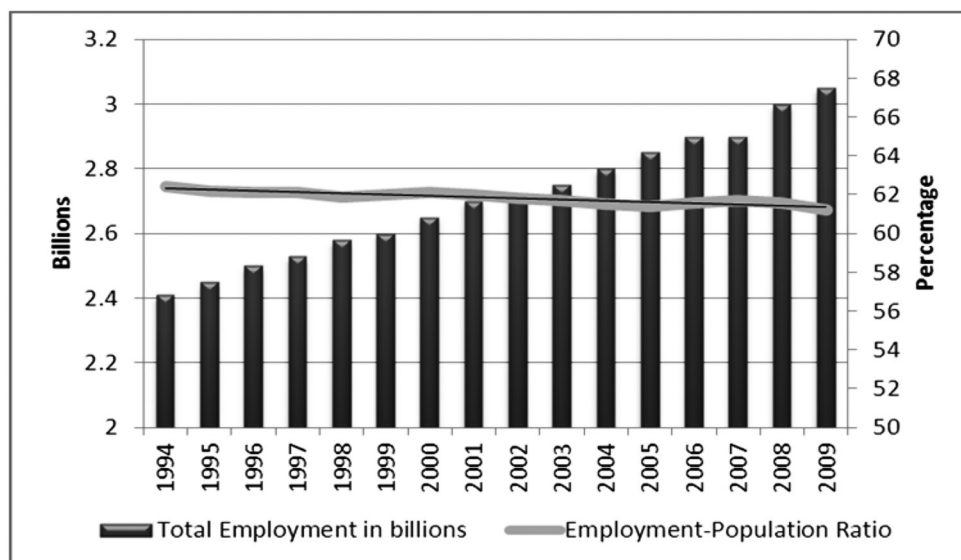


Figure 2. Global Employment and Employment-Population ratio 1994-2009

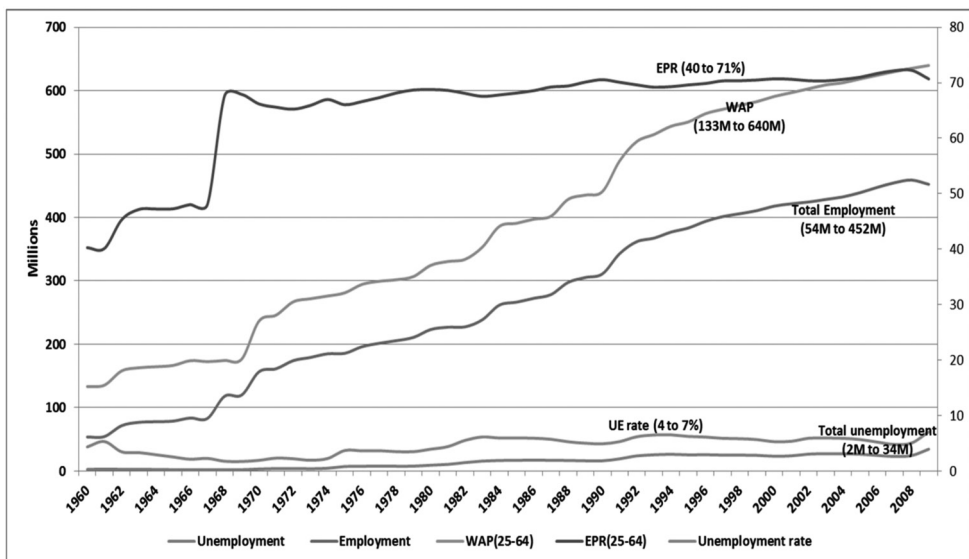


3.1 Regional Performance

Employment growth in the USA fully reflected this long term trend. Throughout the 20th century, the USA aggressively adopted every labor-saving technology that it could invent or borrow from abroad. It has also been one of the economies most open to the impact of international labor migration, as well as foreign competition in both manufacturing and, more recently, service outsourcing. Yet over the last 100 years, employment in the United States has grown by nearly 100 million jobs or 400%. Between 1990 and 2007 alone, the US economy created an additional 25 million jobs. Only as a result of the recent financial crisis, unemployment in the US rose sharply, from 4% in 2005 to 9.6% in 2010.

Figure 3 shows the employment performance of OECD countries over the past five decades.¹³ Since 1960 the working age population has grown four-fold, while the EPR for those aged 25-64 has risen from 40% to 72%, reflecting the large-scale induction of women into the work force. More people are working than ever before, but in absolute numbers more people are unemployed, because the population is larger and a higher proportion of the population are job-seekers.¹⁴ From 1997-2008, the EPR for OECD countries actually rose slightly, while unemployment fell from an average of 7.1% to 6.1%.¹³ These broad trends mask considerable differences in the performance of individual OECD countries. In 2009 the EPR (25-64) ranges from a high of 83% in Iceland and Switzerland to a low of 49% in Turkey and 64% in Hungary and Italy. Overall, unemployment levels have risen by 30% above pre-crisis levels in the G-20 nations of Europe. Unemployment in Spain rose from 9.8% in 2008 to 20.1% in 2010, and in Estonia from 4.7% in 2008 to 17% in 2010. In the EU-27, 23 million men and women were unemployed in January 2011. Youth unemployment rates among the G-20 currently average twice the rates for adult unemployment.¹⁵

Figure 3. OECD Employment Trends 1960-2009



Wider disparities exist between developing countries. During the period 1991-2007, employment in Brazil grew by a phenomenal 85%, Egypt by 63%, India by 47%, China by 40% and Korea by 35%. The EPR in East Asia declined by 3.5% over the past decade, a period in which working-age population (WAP) of the region rose by 17%, primarily due to significant growth in secondary and tertiary education. Since 2000, the tertiary enrollment rate (TER) rose from 7% to 23% in China. South Asia has experienced a 1% decline in EPR since 1991, while WAP rose 27%. Other regions have all experienced a rise in EPR over the decade in spite of substantial population growth. Annual job growth in sub-Saharan and North Africa, Latin America and the Caribbean averaged 2.8% or more, resulting in a 50% increase in total employment compared to a 46% increase in working age population.¹¹ As a group, the countries of Central and Eastern Europe and the former Soviet Republics have been the poorest performers. After experiencing a serious deterioration in employment following the end of the Cold War, the trend began to reverse after 1999, until halted by the recent crisis. Total employment in Russia rose only 4% between 1991 and 2009, while the EPR (age 25+), which had declined from 65% in 1992 to 55% in 1999, rose back to 63% by 2009. Hungary's EPR fell from 50% to 46% before rising back to 50%. Poland followed a similar pattern.¹⁶

This remarkable performance defies simplistic explanation by existing theory. It necessitates a re-examination of underlying assumptions about the relationship between economic growth, employment, demography, technological change, and social development based on a wider perspective of employment and economy. But the challenge is far from over. According to ILO estimates, there were 205 million unemployed globally in December 2010 and recovery to pre-crisis employment levels may take another five years.¹⁷ It projects that the world will need to create another 440 million additional jobs by 2020 just to absorb new entrants to the labor force.¹⁷

Employment is the only meaningful option for providing a decent living to 1.5 to 2 billion people living in poverty in developing countries and for fulfilling the aspirations of an equal number of people to rise to middle class levels of prosperity in those countries. The accelerated growth of international trade and new job outsourcing policies have led to job cuts in some sectors, fueling public resentment towards globalization and intensifying demands for quick remedial action on the home front. Expectations about rising incomes and better living standards have led to dissatisfaction with present stagnant living conditions, providing fuel to fundamentalist and extremist movements. In such a context, India's extraordinary initiative to provide guaranteed employment opportunities to nearly 50 million of the poorest rural workers reflects its recognition of just how vital this issue is to national security and human welfare.

3.2 Youth and the Elderly

Youth unemployment is of particular concern, not only because it mars the prospects of the next generation; high levels of youth unemployment are also associated with rising levels of social violence. The youth unemployment rate was 28% in Greece when the first public demonstrations, strikes and protests broke out in 2007. At the end of 2010, the youth unemployment rate was 21% in the EU-27, the highest rates occurring in Spain (43%), Slovakia (32%) and Lithuania (34%). Prior to the recent protests that toppled President

Mubarak, Egypt's GDP had been growing rapidly but too few jobs were created to keep up with the growing labor force.

At the same time, increasing longevity, falling birth rates and end of the baby boom have resulted in a smaller working population in OECD countries to generate tax revenues to support retirement and social security funds. Adding to that higher unemployment rates, rising levels of unemployment may severely aggravate the problem of funding pensions and balancing government budgets in future. Generating employment for youth today is essential for financing retirement of a growing elderly population. The number of older people over 60 years is expected to increase from about 600 million in 2000 to over 2 billion in 2050. By 2050, over 80 per cent of older people worldwide will be living in developing countries.¹⁸

4. Right to Employment

The prospects for full employment in an era of rapid globalization and economic integration are of vital concern to all humanity. Piecemeal adjustments will not deliver the results at a time when radical new approaches are required. In an increasingly interdependent single global economy and labor market, national initiatives— too often the spur for protectionist policies— are necessary but not sufficient. There is an urgent need for fresh thinking on the theory of employment and for the development of global models and strategies designed to achieve and sustain full employment for all humanity, based on recognition that human welfare and well-being are the primary goals and most important objectives of all economic systems. A human-centered theory of economy and employment needs to be founded on the realization that human beings – not impersonal principles, market mechanisms, money or technology – are the driving force and central determinants of economic development. It is human values, attitudes and actions that determine the type of economic system we have and how it creates opportunities and distributes benefits. Human imagination, knowledge, skill and ingenuity and the social organizations we fashion are the primary resources for generating wealth and welfare. Economic development is one aspect and expression of social development which is the process of discovering, unleashing, developing and harnessing the unlimited productive capacities of the social collective and every individual.¹⁹

Social transformation over the past century has radically altered the structure of society and the nature of work, as well as the sources of livelihoods and economic security. Several billion people have raised themselves from subsistence level existence to middle class security and unprecedented levels of prosperity. While political and social freedom have been vastly extended, social authority and responsibility have also proportionately increased. In the process, the life of every individual has become far more subject to external factors determined by the prevailing political and economic system – factors such as military spending, public debt, taxation and interest rates, trade policies and tariff barriers, zoning, safety, environmental and labor laws, etc. To cite one example, replacement of manual labor with mechanized processes became a prevalent central strategy for economic growth during the Industrial Revolution, giving rise to tax policies that favored capital investment in plant and machinery, rather than job creation by investment in human resources.

In a report to the UN in 1994, the International Commission on Peace & Food (ICPF) argued that this radical social transformation necessitates a fundamental change in our concept

of individual rights and social responsibilities.³ In a highly regulated modern society, access to employment opportunities is the primary and essential means available for individuals, families and communities to ensure their survival and welfare. But their freedom to do so is severely constrained by policies and factors determined by the social collective. Today, government intervenes in virtually every aspect of society's economic existence, restricting the freedom of the individual to seek his or her own livelihood and determining the type and number of job opportunities available. As democratic government ensures and enforces the right to vote and the universal right to education, it must accept equal responsibility to ensure remunerative employment opportunities are generated for the economic welfare of all its citizens. In view of these changes, the Commission called for recognition of employment as a fundamental human right to be constitutionally guaranteed by governments.

At the World Academy of Art & Science's conference on the Global Employment Challenge in 2009, Winston Nagan examined the legal basis for the right to employment:

*"To the extent that employment is one of the most important mechanisms for the allocation of purchasing power to the individual, the right to employment may be seen as the critical foundation of economic democracy. If society cannot assure the survival of all citizens through employment access, it may be that the state has a special obligation to provide employment opportunities for all. In short, the right to employment is not a privilege, it is a right. To the extent that economic survival is critically sustained by employment, it could be argued that the right to employment has the character of a fundamental human right."*²⁰

The responsibility of national governments for generation of employment has long been acknowledged, even in the capitalist world. The New Deal and US Employment Act of 1946 and similar legislation in Canada, UK and Australia acknowledge that responsibility. Articles 23 and 24 of the Universal Declaration of Human Rights (1948) affirm the right to work, free choice of employment, just and favorable working conditions and protection against unemployment. These in turn served as the foundation for the development of two human rights treaties in the 1960s concerned with civil, political, economic, cultural and social rights, which together are generally regarded as an International Bill of Human Rights. These culminated in the ILO's "Declaration of Fundamental Principles and Rights at Work" in 1998.

Guaranteeing the right to employment, like other human rights, is not merely a question of social justice. It is an inevitable consequence of an evolutionary movement which has driven the process of political and social democratization over the past few centuries. Rights are not freely granted out of benevolence, but rather because the force of historical events compels it. Those with the foresight to recognize the inevitable, anticipate it and foster the evolutionary movement. Those who cling to outmoded beliefs generate resistance that transforms peaceful evolution into violent revolution. Today the growing violence by whatever name at lower levels of society throughout the world is testimony to the groundswell of aspiration by an awakening humanity that will not be denied.

Our inability to achieve full employment is often raised as an objection against recognizing it as a fundamental human right. Amartya Sen rejects this view by insisting that a right cannot be contingent on our immediate capacity to enforce it. "If they cannot be realized because of

inadequate institutionalization, then, to work for institutional expansion or reform can be a part of the obligations generated by the recognition of these rights. The current unrealizability of any accepted human right, which can be promoted through institutional or political change, does not by itself convert that into a non-right.”^{21,*} Indeed, the rationale for the affirmation of environmental rights, as well as the rights of women and persecuted minorities, is based on the same premise.

In its report, ICPF went even further in affirming that recognition of the right to employment is the single most essential and effective means that can be adopted to achieve full employment. The Commission argued that full employment is not only a desirable goal, but also an achievable goal, citing both historical evidence and social development theory in support.

*“As long as we continue to believe that society is truly helpless to manage job growth, there will be strong resistance to the full employment goal. We must recognize that the present status and functioning of our economies is the result of specific choices that have been made in the past, based on priorities and values that were relevant or dominant at the time, but which we certainly are not obliged to live with indefinitely, and, in fact, are continuously in the process of discarding in favor of new values and priorities. The rapid adoption of environmentally-friendly policies around the world is positive proof of how quickly the rules, even economic rules, can change when there is a concerted will for a breakthrough... Recognizing the right of every citizen to employment is the essential basis and the most effective strategy for generating the necessary political will to provide jobs for all.”*³

In this context, India’s landmark National Rural Employment Guarantee Act (2005) assumes much greater significance.²² The sheer magnitude of the country’s population and employment challenge – 40% living below the \$1.25 per day poverty threshold in 2005, 55% as measured by UNDP’s multidimensional poverty index in 2010 – would apparently disqualify it from an initiative which guarantees a minimum of 100 days of work annually to 45 million families, affecting more than 200 million people. India has coupled its idealistic affirmation of human rights with a pragmatic recognition that ensuring sustainable livelihoods for all is absolutely essential for social stability and national progress.

5. Theory of Social Potential

When Adam Smith published *The Wealth of Nations*, production was largely dependent on labor; thus, economic growth went hand in hand with growth of employment opportunities and incomes. But in the post-industrial economy, technology can often be applied to multiply production and stimulate economic growth with little or no increase in human labor. This compels society to seek ways to redistribute the privileges and benefits associated with employment to cover all its members. Furthermore, the globalization of manufacturing and outsourcing of services blur the boundaries between national labor markets, drastically reducing the efficacy of policies designed to maximize employment at the national level. Thus, the nation-centric model and national level strategies are inadequate. In a 1996 report to the Club of Rome entitled *The Employment Dilemma and The Future of Work*, Orio Giarini

* For further discussion on this issue, see the World Academy of Art & Science, conference on Global Employment Challenge, <http://worldacademy.org/>

and Patrick Liedtke exposed the inadequacy of existing theory and called for the formulation of a new approach. “We have to understand why the old theories were created, where and why they fail now and then propose a feasible, more efficient alternative.”²³

Most social thinkers – Marx is an obvious exception – have been constrained from evolving alternative theories by the misconception that economics is governed by immutable, universal laws and that we must necessarily accept what Nature offers and do the best we can in the given circumstances. Prevailing economic theory affirms that employment generation is a function of private and public investment, money supply, availability of credit, interest rates, public and consumer debt, prevailing wage rates, access to markets, labour productivity, technological innovation, migration, demographic trends and many other variables. There is no doubt that changes in all of these factors are related and correlated with employment, but even when these relationships are predictive, they do not constitute a true theory of employment. In their report, Giarini and Liedtke challenged the classical view of economics as a “system of models in the deterministic tradition of Newton’s world as an autonomous, closed, self-regulating universe, running according to predetermined laws, culminating in a static equilibrium.”²⁹ Nobel laureate physicist Ilya Prigogine sounded a similar note saying that trying “to combine classical mechanics with human sciences was to attempt an unnatural marriage. Classical science described a static world, while human sciences deal with an ever-changing situation, where the idea of reaching an equilibrium is meaningless.”²⁴

5.1 Human Choice

If the economic life of humanity is not determined by immutable laws of Nature, then what is it determined by? It is determined by the evolution of human civilization. It is a product of human perceptions, values, aspirations, attitudes and culture and of the social organizations fashioned in the course of social evolution, which are in turn subject to the limits of our understanding, egoistic attitudes and willingness to arrive at a more adequate solution. It is the result of human choices made in the past, choices that can be altered at any time.

Economic policy fails in its efforts to reduce unemployment because it views employment and economy in isolation from the wider society of which they are a part. Employment is a subset of economy and economy is a subset of society. “Society is the whole of which economy is a part. Economy is the whole of which money, markets and employment are parts. Economics is one aspect of human life, one contributing factor to human welfare and well-being.”²⁵ Reverse the perspective and examine all the means available to accelerate social development and the opportunities for unlimited job growth become apparent.

Social development is a process that simultaneously encompasses all domains of human activity – political, economic, intellectual, scientific, educational, organizational, cultural, psychological and spiritual. Social development is a function of how intensely human beings aspire for a better life, how hard we strive to improve our knowledge and skills, how willing we are to innovate and risk, how highly we value our own self-respect and respect the value of other human beings, our capacity to lead and be led, to accept and support governmental authority, to organize and cooperate for mutual benefit. It is these intangible essentials – not intractable laws of Nature – that set the limits on human productivity, growth, employment,

human welfare and well-being. A small change in public sentiment can make the difference between economic expansion and prolonged recession. New types of organization – double-entry bookkeeping, moving assembly line, suburban shopping mall, franchising, overnight delivery system, micro-finance, e-commerce, social networking – can open up opportunities previously unimagined.

A broader social theory of employment must take into account the fact that both human needs and human capacities are not only unlimited, but infinite. The more you develop and draw upon them, the greater their velocity of multidimensional expansion. Social development is a self-augmenting process. While material resources are apparently limited, there is no inherent limit to human resourcefulness, to the creative capacity of human beings to fashion new ideas, new products, new services, new technologies, new and more effective types of social organization. Basic needs may be limited, but human aspirations and creative potentials are not. As ICPF insisted, human beings are the most precious of all resources:

*“For millennia we have tended to overlook or, at best, grossly underestimate the greatest of all resources and the true source of all the discoveries, inventions, creativity and productive power found in nature—the resource that has made minerals into ships that sail the skies, fashioned grains of sand into tiny electronic brains, released the energy of the Sun from the atom, modified the genetic code of plants to increase their vigor and productivity – the ultimate resource, the human being... When we rely on external resources, we achieve the minimum because our achievement is based on what we see before us. When we rely on the inner resources, we achieve the maximum because we are constantly led to discover more of our own unlimited capacities.”*³

It was this perception that prompted former Club of Rome member and World Academy President Harlan Cleveland to affirm the extraordinary significance of three driving forces with untold power for social development and global prosperity – the revolution of rising expectations that has spread around the world after 1950, the onset of the information revolution, and the emergence of uncentralized organizations – all three founded on the most intangible of substrates, human imagination and human aspiration – and to proclaim the individual human being freely exercising human choice as the basic mechanism for liberating and productively harnessing that potential energy in society.

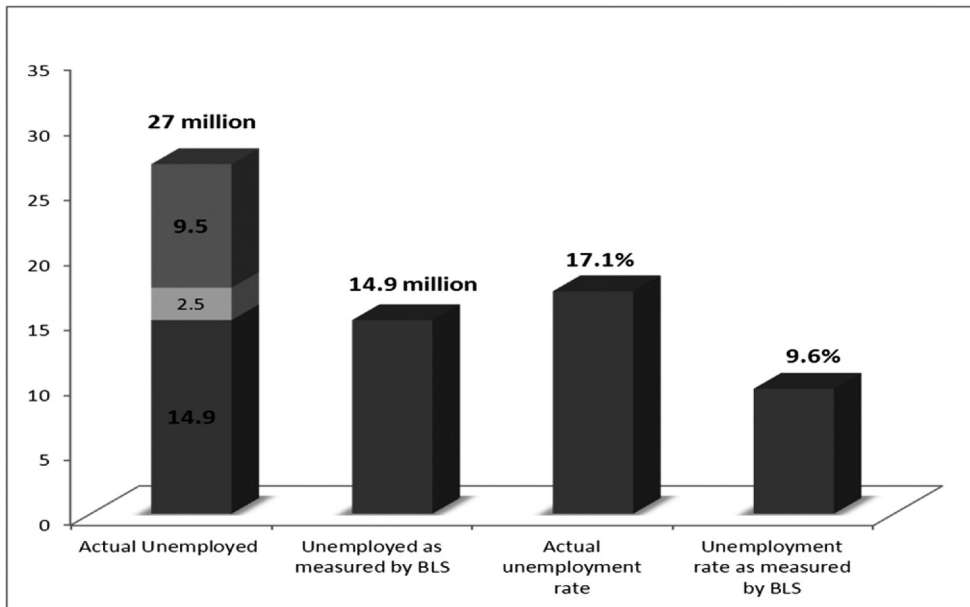
*“The phenomenal social creativity of the past century seems to point to a source of energy, for practical purposes unlimited, in human society as well. The source of that energy is the individual human being. Under conducive circumstances, the human individual demonstrates an astonishing capacity for imagination and new creation – of new and improved material inventions, of communication networks, of social organizations and ideas, and of ways to interact with forces beyond reason and knowledge...It is the mind’s decisions that release human energy and propel it into action ... The greater the value that society accords to the individual human being, the greater the freedom of choice it offers to each individual. As tradition was the technology for development of the physical society, individual human choice is the technology for the development of the mentally self-conscious society.”*²⁶

5.2 Paradox of Unmet Needs & Untapped Social Resources

Today economic theory and practice confront an apparently insolvable dilemma. The prevailing global economic system is one in which enormous unmet social needs coexist side by side with enormous untapped social resources. On one side we have approximately three billion people with a plethora of unmet social needs living on incomes of less than \$2.50 a day. So long as these billions of people lack the minimum requirements for a healthy normal life, there can be no dearth of work to be done—growing food, making clothes, building homes, providing education, medical care and other essentials. At the same time the world is aflood with unutilized and underutilized resources. Daily \$4-5 trillion circles the globe in search of speculative returns for an apparent lack of productive investment opportunities.

At the same time we live in a world in which only a fraction of the technological and organizational resources are harnessed for productive purposes. More importantly, the current economic system fails to effectively utilize the most precious of all resources – human beings. The sheer magnitude of the waste is difficult to imagine. Upwards of 200 million people are unemployed and probably more than a billion are involuntarily underemployed. Randall Wray estimates that in the USA alone at least 25% of the work force is either unemployed or underemployed.²⁷ According to another estimate presented in figure 4, in September 2010 real unemployment in USA was 17% and 27 million people were affected—much higher than the 14.9 million counted under the traditional measure of unemployment. There were 9.5 million job seekers who were either part-timers or have had their hours reduced.²⁸

Figure 4. The real employment situation in the US (September 2010 data)



This inability to generate gainful employment for millions of energetic, aspiring youth and richly talented, experienced elderly workers constitutes an incalculable opportunity cost, an unconscionable waste that proclaims the fallacy of current concepts and systems. Opportunities and untapped social potentials are not wanting. What is needed is a more comprehensive perspective generative of more effective policies.

An article in Cadmus issue No.1 by Ashok Natarajan summarized the paradox and the challenge this way:

“The problem of unemployment poses a serious challenge to both economic theorists and policy-makers, because it calls into question the efficacy of the market-place as a means for achieving optimal human welfare... At any point in time society taps only a tiny portion of its creative potential. Society evolves by developing new ideas, organizations, systems, needs and ways of life. Economic growth arises as a natural result of social development and social evolution. Society is a field for interaction between people. Social potential is created by forging new and more effective ways for people to interact. Four social institutions — language, roads, cities and money — formed the basis for the evolution of civilization over thousands of years. Today our capacity for constructive interaction has multiplied a thousand-fold, yet we have only begun to understand how to utilize that greater potential.”²⁹

Short term strategies to stimulate job growth by manipulation of interest rates, money supply and public spending are based on a too narrow conception of how society creates new employment opportunities. While such measures may be justified in extreme conditions, they tap only a tiny portion of the underutilized social potential. The notion that there is a fixed or inherently limited number of jobs that can be created by the economy is a fiction. Growth of employment is a natural result of the development of society. Every social advancement has some positive impact on job growth – the invention of new products (i-Pod, i-Phone) and new services (web search engines and employment exchanges), organizational innovation (micro-finance, social networking), better or cheaper communication (cell phone), changing social attitudes (working women), more years and better quality of education, greater access to information, more rapid technology dissemination and adoption, faster transportation (air travel), higher quality standards (food, cars), increased administrative efficiency, greater environmental awareness (recycling, energy conservation) and health consciousness (fitness), greater speed of any social activity, increased public confidence and entrepreneurial spirit (internet start-ups), greater openness to new ideas and more tolerant attitudes to new and different ways of life, greater freedom and respect for the individual. Some of these advances have a dual effect – eliminating jobs in older sectors and creating jobs in new fields. We readily note the impact of new technologies on existing jobs, but fail to observe the new jobs created directly or indirectly in other fields, such as education, research, product development, sales and service. It is not just advances in technology that work in this fashion. Virtually every major advance in social attitudes, institutions, values and lifestyles has a positive impact on total employment. Any measure that stimulates social development along any of these lines leads directly or indirectly to the generation of new employment opportunities.³⁰ Taken together they constitute a vast reservoir of social potential.

It was this thinking that prompted the World Academy’s *Global Employment Challenge*

to call for the formulation of a more comprehensive and integral social theory of employment that can serve as the foundation for more comprehensive and effective practices – “a theory of economics based on the premise that all members of society have a right to employment, a theory that not only affirms the right but also presents the structures and processes by which this can be achieved.”³²

When the issue of employment is viewed from an even more fundamental level, it becomes apparent that there can never be a shortage of work that needs to be done or a shortage of capacities to achieve it. Every person born into this world brings with him an inexhaustible array of unmet needs and aspirations waiting to be fulfilled and undeveloped capabilities eager to be developed.* At the same time humanity is in the process of evolving from a more physical to a more mental mode of existence in which the pursuit of social, psychological and mental needs becomes primary. Rising levels of productivity resulting from technology, social organization, education and training make it possible for each human being to produce far more than is required for his own survival and personal consumption; and there is no inherent limit to this rising productivity. But there is also no inherent limit to the range and quantity of needs to be met. And at the higher end of the spectrum, needs such as education and medical care require higher levels of human input. No matter how fast technology advances in meeting some of these needs, human aspirations grow faster – not only for the physical necessities, but also for information, education, health care, travel, entertainment, social interaction, culture and other leisure activities. Human needs are inherently inexhaustible. So is the human potential for acquiring more education and training, greater knowledge and skill, higher levels of capacity for organization and effective social interaction, higher values, more enlightened and expansive attitudes. These – not money, markets or technology – constitute the true foundation on which human development takes place. A comprehensive and integrated theory of employment has to be predicated on knowledge of the underlying process of social development and evolving human consciousness.

6. Engines of Job Growth

Three significant trends will strongly influence global employment prospects in the coming decades – rapid economic growth in the developing world, demographic trends in OECD countries and rising levels of education worldwide.

6.1 Job Exports

The traditional nation-based perspective of employment fails to take into account the enormous positive impact of global economic growth on job creation, because many of those jobs are created in other countries. *Jobless growth is a misnomer*. When the impact of domestic growth on total employment is taken into account, the most economically advanced countries are actually running a *net negative unemployment* that is not immediately apparent, because we focus only on jobs created in the domestic economy. High income countries are net job exporters. These jobs, in turn, spur a rise in incomes, soaring levels of consumer

* If the average person works for 200 days a year during 50% of his or her lifespan, it means they are gainfully employed for about 30% of total days they are alive. Considering the fact that one-third of humanity does not work at all, we roughly estimate that the average human being works for only about 22% of the days. Consider also that our requirement for goods and services spans at least 16 hours a day and in some cases 24 hours, which is two to three times greater than the actual time we spend in working, meaning that we work only about 10-15% of the actual time we consume. If each of us required the full-time assistance of one person to provide for our needs round-the-clock, we would require 40 to 100 times as many work-providers as we have consumers, since each of them works only 10-15% of their own lifetime as well.

demand and demand for more sophisticated technologies produced elsewhere. Thus, the generation of jobs in other countries is a powerful engine for both continuous expansion of the global economy as well as for continuous global job growth.

While it is difficult to accurately estimate the real impact of job exports, the USA is most probably the highest net job exporter and easiest example to document. The US currently employs about 12 million workers in its own manufacturing industries, accounting for about 9% of total domestic employment. In addition it generates approximately 21 million jobs in 12 low cost developing countries, including China, Korea, Mexico, India and other Asian nations. This approximate figure may be taken to represent the net addition to the US workforce after offsetting America's own manufacturing and service exports to the world. If service imports, such as IT and business outsourcing, are also taken into account, the total net overseas job creation may be closer to 24 million. This is a rough estimate, but it should be sufficient to illustrate the point that as incomes rise, net job creation occurs both domestically and internationally. If correct, it means that America produces 18% additional jobs overseas and that in normal times it is running a net negative unemployment rate (after deducting domestic unemployment) equal to 12 or 13% of total domestic employment.

The phenomenon of job exports helps explain the remarkable fact that total global employment has more than kept pace with population growth and technological development during the past six decades. Higher incomes and greater demand for goods and services, both domestically and internationally, enable people in more prosperous nations to generate far more work for other people. Granted that the net contribution to global employment by most countries is probably much lower than the USA level in both absolute and relative terms, nevertheless the principle should hold universally. As living standards continue to rise in many middle income countries, they too will become net job exporters. This is true for low wage developing countries as well. India-China cross-border trade crossed \$60 billion in 2010. Over the next two decades, these two giant economies, representing 40% of the world's people, will create hundreds of millions of new jobs, both domestically and internationally.

6.2 Demographic Trends

The world is now in the early stages of another demographic revolution, which promises to have tremendous impact on the future of employment worldwide. This revolution is the result of a steep and steady decline in the birth rate and an increase in life-expectancy in the more economically-advanced countries. Life expectancy in Western Europe has risen from 46 years in 1900 to 80.3 years in 2010.³¹ The result of this trend is a reduction in the number of young people entering the job market and a surge in the size of the elderly retired population. Already 50% of the population in industrialized countries is in the dependent age groups, which includes those under 15 and those over 64.²⁹ Over the last decade, the old-age dependency ratio – the percentage of people aged 65 and above compared to the number of people aged 15-64 – in these countries has risen from 19% to 22%.⁴⁰

Table 2 gives the projected growth of the working age population for the main regions and the world during the first half of the 21st century. It shows that the labor force in Europe will level off by 2010 and begin to decline thereafter.¹¹ Already population growth has become negative in some countries. These trends will have enormous impact on the future of employment. The EU's labor force is expected to shrink by about 0.2% a year between

2000 and 2030.³² The old age dependency ratio will rise from 22% in 2000 to 35% in 2025 and 45% or 50% in 2050.³³ As the old age population grows, the working age population will shrink. The EU-25 is expected to lose an average of one million workers a year during this period. The table also shows that over the next 15 years, the world working age population is projected to increase by another 800 million, slightly less than the one billion increase over the previous 15 years, signaling a gradually decline from the peak population growth pressure experienced in recent decades.

Table 2. Projected change in working age population 2010-2050

Region (millions)	1990	2010	1990- 2010	2030	2010- 2030	2050	2030- 2050
Europe	481	501	4%	453	-10%	398	-12%
L. America & C.	261	385	48%	463	20%	463	0%
Africa	334	582	74%	937	61%	1311	40%
Asia	1950	2797	43%	3318	19%	3388	2%
India	503	781	55%	1022	31%	1098	7%
China	755	973	29%	983	1%	870	-11%
N America	187	236	26%	255	8%	274	7%
World	3230	4524	40%	5455	21%	5866	8%

A study by the UN Population Division estimates that the 47 nations of Europe would have to admit 161 million migrants during the period 2005-2050 in order to prevent the decline of the working age from 2005 levels, a net average of 3.6 million migrants per year during those 45 years.¹¹ A World Bank Study in 2003 estimated that 68 million immigrants will be needed to meet Europe's labor requirements during the period from 2003-2050.³⁴ These figures are only scenario projections, but it is evident that, unless major policy initiatives are taken, the net result will be a dramatic decline in the relative size of the working age population in Europe and a shortage of workers to fill the available jobs.³⁵ Recognition of this fact is already prompting major policy shifts within the EU. In an effort to lift 20 million people out of poverty, the EU has committed to raising the overall employment rate within the region from 69% to 75% of those aged 20-64 by 2020.³⁶ Similar trends will prevail in other countries. The same UN study estimated that Japan would need to admit 647,000 immigrants annually for the next 50 years in order to maintain the size of its working population at the 2000 level.³⁷ By 2013, labor-force growth in the United States will be zero. Prior to the financial crisis, studies forecast that the US would have a shortage of 17 million working age people by 2020 and that China will be short of 10 million.³⁸

India's working age population will rise by about 135 million by 2020, which is projected to generate surplus of 47 million workers, but there is evidence to suggest that even in India, the surpluses may prove illusory.^{17,51} Reliable data on employment growth in India is confined to the formal sector, which represents less than 10% of total jobs. Empirical evidence suggests actual job growth is far higher than official measures. Otherwise with more than seven million

new job seekers entering the labor market each year, unemployment would have swelled enormously in recent years; whereas in fact both urban and rural employers report increasing difficulty attracting the workers they need. As indirect evidence of a tightening labor market in India, salary levels in the formal sector are rising at 14% annually and are projected to be the fastest rising in Asia. Wages of unskilled workers in some non-metropolitan and rural parts of the country are rising even more rapidly.

Projected job shortages in developing countries are based primarily on anticipated domestic economic growth and demographic trends. They do not fully take into account the growing demand for jobs created by rising economic prosperity in other countries.

6.3 Education, Skills & Employment

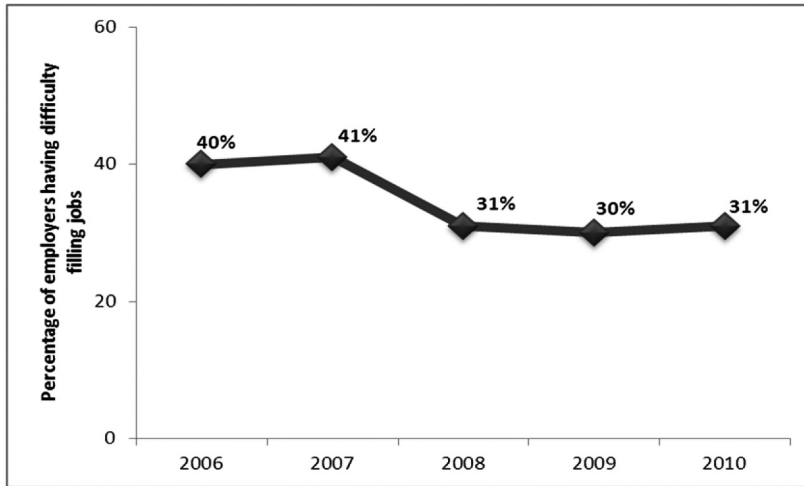
Earlier in this paper we have argued that apart from short term fluctuations resulting from changes in public sentiment and economic policy, job creation is a function of a complex array of social variables working through a largely invisible process of social development. Of all the factors mentioned, education is of greatest importance and may well turn out to be the single most reliable indicator of long term growth of employment opportunities. The importance of education is most clearly reflected in the link between levels of education and unemployment rates. A study prior to the recent recession in the U.S revealed that those with a high school diploma earned 42% more and had an unemployment rate 36% less than those without a high school diploma.³⁹ In the Czech Republic, 23% of people who failed to finish secondary school are unemployed, compared to just 2% of university graduates.⁴⁰ University graduates in Norway enjoy a 26% earnings premium over people who only finished secondary school. In Hungary that figure rises to 117%.⁴¹

This same difference exists with respect to unemployment levels for skilled and unskilled workers. In the USA those aged 19 and under have an unemployment level that is four times higher than those aged 25 and above who took the time and effort to improve their skills by training. The employment rate for people with low-skills is only 49% in Europe, compared to 83% for those with high levels of skill. The differential gap between these two categories of people is 35 points in Belgium, Ireland, Italy, Finland and the U.K. The employment rate for women with low-skills in Europe is only 37% and in Italy it is as low as 27%.

Moreover, the problem of unemployment co-exists with a massive shortage of employable skills. According to the World Bank, skill shortages in the new EU member states have emerged, particularly after 2005, as a constraint to expanding employment. Nor are skill shortages confined to the high tech industries. In the USA, high tech industries employ only 5% of the work force. The skill shortage is also prevalent in basic manufacturing industries, such as the tool and die industry, so that many firms are forced to invest in expensive, computer-based machines or outsource the work to overseas suppliers. Plumbers, electricians, masons, carpenters and other skilled craftsmen are also in short supply.

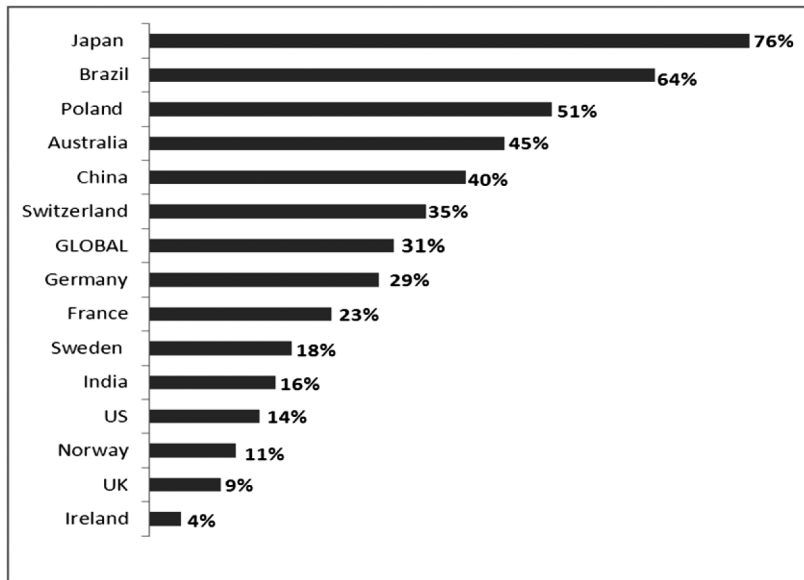
The developing countries present a similar situation. Though India produces more than 500,000 technical graduates annually, corporations are finding it difficult to recruit sufficient skilled personnel.⁴² Here too, the skill shortage spans a wide spectrum of industries and types of jobs. A 2007 study by the Federated Indian Chambers of Commerce & Industry estimated a shortage of 500,000 MDs, one million nurses, and 500,000 engineers. They also projected

Figure 5: Global Skills Shortage



a shortfall of 80% for doctorate and post doctorate scientists in biotechnology, 65 to 70% in food processing, 50 to 80% in banking and finance, and 25% for faculty in education. WHO estimates a global shortage of 4.3 million healthcare workers. Already one out of 5 practicing physicians in the US is foreign trained and by 2020 the US could face a shortage of up to 800,000 nurses and 200,000 doctors.⁴³ Figure 5 above presents the results of global surveys

Figure 6: Skills Shortage by Country



conducted in 2010 by Manpower Inc., one of the world's largest recruiting and employment agencies, showing the percentage of employers reporting difficulties in finding people with the skills needed to fill vacant positions. Employers reporting the most difficulty finding the right people to fill jobs are those in Japan 76%, Brazil 64%, Argentina 53%, Singapore 53%, and Poland 51% as shown in Figure 6 above.⁴⁴

The rate of social development exceeds the rate of human resource development. All evidence points to an ever increasing rate of social change in future. Therefore, unless a concerted effort is made to consciously accelerate human capital formation, the gap will continue to increase. Left unaltered, this trend would be enough to account for rising levels of unemployment in the midst of unprecedented prosperity.

6.4 Life-long Livelihood

In contemporary society, employment is a source of social identity, status and recognition. It is a field for forging cooperative social relationships and interaction with other people. It is also an opportunity for continuous learning and for exposure to the challenges that develop our capacities, keep us growing and youthful. For many people, retirement means to lose one's identity and sense of usefulness, which is one reason why it is often associated with a rapid deterioration in energy and health.

The present conception of employment and retirement does not recognize the social and psychological benefits of work. In addition, it overlooks the immense value of human capacities – human capital – wasted when people are prematurely retired long before the end of their productive lifespan. Unlike machines which deteriorate with age, human beings learn and mature over time, and often make their greatest contributions late in life, when accumulated experience has distilled into wisdom. Moreover, in a world in which the majority of children are still denied access to quality education and so many other human needs are left unmet, it is unwise and wasteful to neglect or prematurely discard this precious resource. Currently employment starts after the completion of education and is terminated abruptly with retirement at age 65. Fuller utilization of our most experienced human resources necessitates a very different structure, which might include the commencement of work experience at an earlier age before the completion of education and extend the working life much longer, with a gradual reduction in working hours according to economic need, health and personal choice.⁹

7. Measuring Employment & Human Welfare

Traditional measures of economic growth and welfare do not take into account the impact of unemployment on human welfare and well-being. With the exception of WISP, the Weighted Index of Social Progress, broader composite indices also exclude this key measure. Eurostat monitors six individual variables related to employment and unemployment, but has not incorporated them within a broader index of economic welfare.

Unemployment is closely linked with income inequality, a crucial determinant of how the benefits of social productivity are distributed among the population. Low levels of unemployment are linked with lower levels of income inequality, as well as higher levels of economic growth, more education and better health.⁴⁵ Broad measures of inequality such as

the Gini coefficient tell us about income distribution among different income groups, but do not reveal the true extent of deprivation among the unemployed with little or no income or prospects of earning, the very group most susceptible to social ostracism, crime, drug abuse and social unrest.

Access to remunerative employment opportunities is essential for both individual economic security and social stability. In a market economy, employment is the principal means by which most people gain access to the goods and services required for their sustenance, security and economic welfare. Hence unemployment is a severe form of deprivation and any measure which disregards it is inherently inadequate. One reason for this omission is the difficulty in obtaining accurate and reliable data regarding real levels of unemployment and underemployment, even in OECD countries. In the absence of suitable job opportunities many people who want and need to work drop out of the labor force and are no longer counted among the unemployed. Many others are involuntary part-time workers unable to find full-time jobs. The number of people who work part-time involuntarily in the US has doubled through the recession, from 4.2 million nationally in January 2007 to 8.4 million in January 2011.⁴⁶ There are also a growing number of healthy, active, experienced elderly workers who are forced to retire or discriminated against in spite of their qualifications and capabilities. An increasing number of youth in countries such as Croatia seek to make education a 'career' simply because they are unable to find attractive job opportunities. Educated, talented women in many countries are denied equal pay to men, are prevented from seeking work outside the home or are discouraged from pursuing a career after marriage. In countries such as India where the vast majority of workers are employed in the informal sector, even basic estimates of total employment and unemployment are inadequate and official figures may grossly underestimate the number of jobs being created as well as real levels of unemployment. ILO estimated unemployment in India at 2% in 2000, while a task force of Indian experts concluded the actual figure was 7.3%.

In a separate paper, the authors have attempted to formulate a composite Human Economic Welfare Index (HEWI) which explicitly incorporates employment-related measures within a composite index of economic welfare.⁴⁷ HEWI includes sub-indices to measure household income and savings, government human welfare-related expenditures, income inequality, employment, education and fossil fuel energy efficiency. Country performance on HEWI is expressed in international US dollars as average per capita real human economic welfare. The Full Employment Index (FEI), one of the sub-indices of HEWI, takes into account the total unemployment rate (TUR), the youth unemployment rate (YUR) and adult unemployment rate (AUR) as well as long term unemployment (LUR) in countries for which data is available.

Table 3 shows the FEI scores for 17 economically advanced and developing countries for the year 2009. FEI scores range from a high of 96% for Korea and Netherlands and 95% for Mexico to a low of 86% for Italy, 82% for Turkey and 79% for Spain. The table also shows that the factors contributing to the total FEI score vary considerably between countries. Only Korea has scored highest on net job creation. All others have negative job creation rate. Korea, Mexico, Netherlands and Canada reported the highest Employment-Population Ratio. Youth unemployment rates varied widely from a low of 6.6% in Netherlands to a high of 38% in Spain. Until more reliable data is generated at the national level, FEI can only be considered indicative and utilized to reflect the significant impact of employment on

Table 3. FEI values for the year 2009

Countries	Unemployment Rate				Emp- Pop Ratio	Job Creation Rate	Full Employment Index
	Total	Youth	Adult	Long term			
Korea	0.04	0.10	0.06	0.00	0.65	0.81	0.96
Netherlands	0.03	0.07	0.06	0.01	0.63	-0.23	0.96
Mexico	0.05	0.10	0.08	0.00	0.64	-0.86	0.95
Australia	0.06	0.12	0.08	0.01	0.61	-0.49	0.94
Japan	0.05	0.09	0.09	0.01	0.59	-2.65	0.93
Canada	0.08	0.15	0.14	0.01	0.63	-0.54	0.93
Germany	0.08	0.11	0.15	0.03	0.57	-0.15	0.91
Czech	0.07	0.17	0.12	0.02	0.59	-2.82	0.91
UK	0.08	0.19	0.11	0.02	0.59	-1.94	0.91
US	0.09	0.18	0.16	0.01	0.62	-3.36	0.91
Portugal	0.10	0.20	0.17	0.04	0.60	-1.76	0.89
Poland	0.08	0.21	0.14	0.02	0.54	-2.61	0.88
France	0.09	0.23	0.15	0.03	0.55	-1.70	0.88
Greece	0.10	0.26	0.16	0.04	0.53	-2.03	0.86
Italy	0.08	0.25	0.13	0.03	0.48	-0.89	0.86
Turkey	0.14	0.25	0.23	0.03	0.44	-3.91	0.82
Spain	0.18	0.38	0.32	0.05	0.51	-6.88	0.79

overall human welfare. Between 2005 and 2009, the FEI for USA fell from 94% to 91%, as a result of a doubling of total unemployment in the country, but this decline underestimates the real impact of underemployment which is reflected by rising levels of income inequality as measured by another sub-index of HEWI.

Figure 7 shows 20 year trends in youth employment for select countries as measured by YEI (1.00 = full employment). The sharpest drop in YEI is for Sweden from 0.93 to 0.77. YEI is relatively constant over time in Korea and India, in spite of a huge surge in the under 25 population, and rising most dramatically in Spain from 0.56 to 0.80 and Italy from 0.66 to 0.76.

Figure 8 compares the Employment-Population Index and the Adult Employment Index for 17 OECD countries. It shows that simple measures of unemployment are inadequate to reflect the real level of human resource utilization and employment generation, since countries with similar unemployment rates may have very different EPRs. Just prior to the recent crisis, the USA had the highest EPR and adult employment rates. Netherlands' adult employment rate was marginally higher but its EPR was significantly lower since a smaller percentage of the total working age population participates in the labour force. Italy showed the widest disparity between the two measures.⁴⁸

Figure 7. Youth Employment Index: 1985-2005

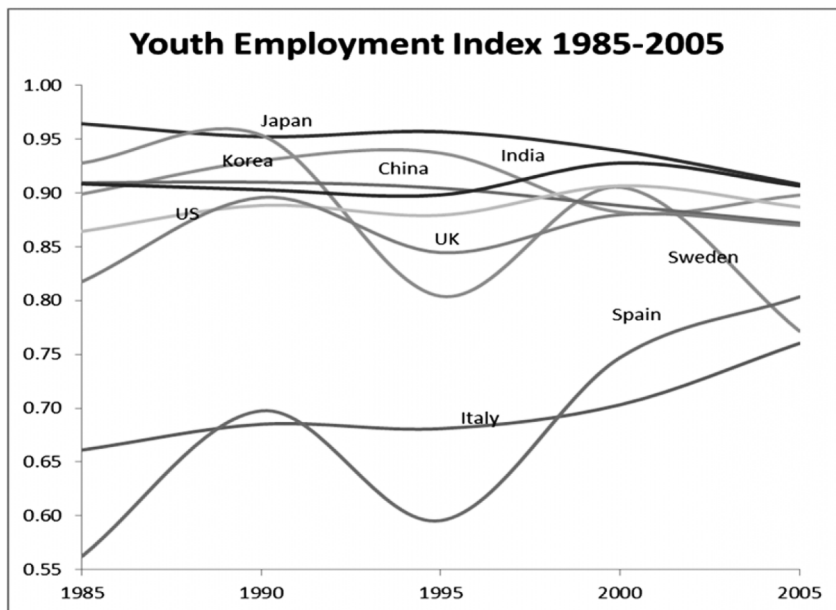
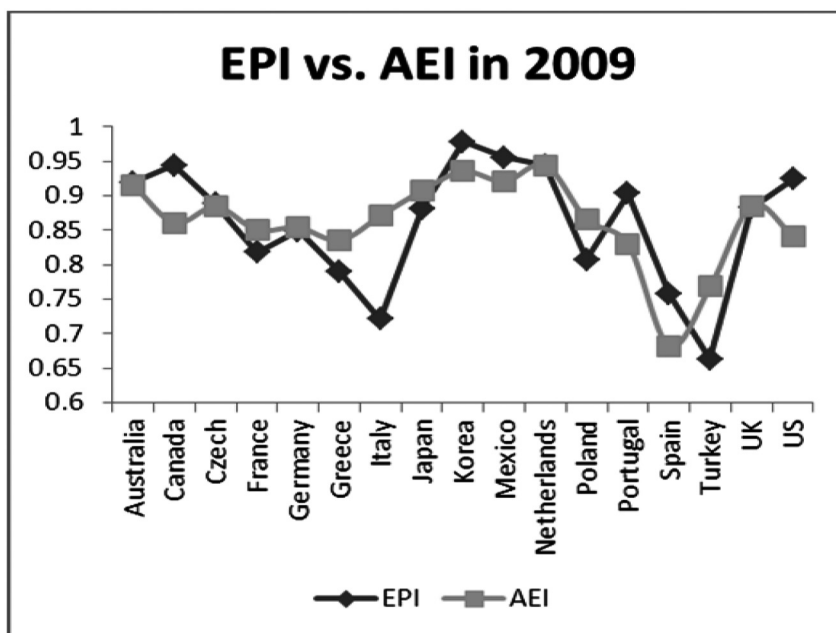


Figure 8: EPI vs. the AEI in 2009



8. Strategies for Full Employment

We have argued earlier that any progressive change in society, such as faster speed, better transport and communication, rising aspirations, greater individual freedom, closer cooperation and more efficient social organization, directly or indirectly results in the creation of new jobs.

8.1 Education

More and better education is the surest, most powerful and effective means of ensuring continuous rapid social development and ever fresh avenues for creation of greater opportunities for employment – better still, self-employment. One of the most effective strategies for ensuring higher rates of job growth is to raise the mandatory minimum level as well as the average level of education in every country. The world that is coming needs ever more informed, educated and broad minded individuals capable of learning quickly and adapting continuously throughout their lifetimes. Education provides the essential foundation for life-long learning.

The average mandatory years of schooling among 34 countries of Eastern and Western Europe is currently 8.8 years. Just 28% of the Portuguese population between 25 and 64 has completed high school. The figure is 85% in Germany, 91% in the Czech Republic and 89% in the U.S.⁴⁹ Only three European countries – Belgium, Germany, and Netherlands -- require 12 years of mandatory schooling. These three are also the only EU countries that make school attendance compulsory beyond the age of 16: 18 in Germany and Belgium, 17 in Netherlands. The immediate result of raising the mandatory minimum will be to generate millions of new jobs for teachers, construction of more schools and production of educational materials. It will also slow the entry of youth into the labor force, the group with the highest levels of unemployment. Medium term it will raise the qualitative capabilities of the workforce, spawn and attract businesses in search of qualified manpower.

Secondary education is not enough. A college education will be as essential in future as primary education became in the 20th century. Korea has the highest gross tertiary enrollment rate (98), an essential source of its economic dynamism, followed by Finland (94), Slovenia (87) and US (83). Twelve countries have TERs above 70%. Another 10 countries have TERs above 60%.⁵⁰ India may be graduating a half million engineers annually, but only 10% of Indian youth are enrolled in higher education. Providing higher education to hundreds of millions of youth necessitates new strategies. The Internet provides an unprecedented opportunity to revamp and vastly expand the reach of higher education globally by adopting new models for educational delivery. According to UNESCO estimates, global enrollment in universities rose 200-fold during the 20th century from 500,000 in 1900 to around 100 million in 2000.⁵¹ Raising global participation rates in higher education to the level prevalent in USA today would require the establishment of hundreds of thousands of new colleges and universities and the training of millions of qualified instructors. For India to raise participation rates to the current US level through traditional means, the number of college students would have to rise from 14 million to 81 million, which would require creation of a few thousand new universities and about 100,000 new colleges in India alone.

The brick and mortar system of higher education prevalent throughout the world is a high

cost, low-productivity delivery system that places quality education far beyond the means of most of the world's population. The internet is already being used to extend the reach of traditional colleges and universities. In the USA which leads the world in on-line higher education, enrollment in fully online courses represents 11% of total enrollments. By 2014, this figure is expected to rise to 20%. Still less than half of all US degree-granting institutions offer fully online courses.⁵² Furthermore, these initiatives fail to take maximum advantage of the new technology. The potential now exists for creating a global virtual university capable of engaging the highest quality instructors and educational materials to deliver high quality education at a fraction of the cost of current systems. Formulation of comprehensive national or international delivery systems for internet-based secondary and higher education can dramatically transform education worldwide. While the cost and expertise for producing high quality multi-media instructional materials may be prohibitive for small countries or private firms, a global consortium backed by national governments could elevate the quality of education globally to the highest levels now pertaining in the most advanced nations.

8.2 Vocational Training

Vocational training is an effective means for addressing the global skills shortage. The emphasis on vocational education and training varies widely between countries. In 2009, 32% of the Danish working age population between 25 and 64 years participated in education or training programs, the highest in Europe. The average for the EU-15 was 11% and for the EU-27 it was just 9%. Most Eastern Europe countries reported levels below 5%. Even countries like India with enormous manpower and training infrastructure suffer from this problem. A mere 5% of India's workforce has received formal vocational training. This is the rationale for a new initiative by the Government of India establishing a National Skills Development Corporation as a public-private partnership with the objective of imparting employable skills to 150 million Indian youth by 2022. Computerized vocational training programs can be a cost-effective means to address the shortage of many skills.⁵³ Instead of spending trillions of dollars on macro-economic stimulus packages and unproductive and destabilizing speculative investments by the private sector, a substantial investment of both public and private funds in a massive global program of vocational training and skill development will provide a solid foundation for continuous economic growth, higher living standards and full employment for all.

8.3 Organizational Innovation

Social organizations encompass the entire gamut of human activities, urban-rural, formal-informal, public-private-NGO, etc. In the late 1980s, India created more than a million jobs for self-employed entrepreneurs by promoting privately owned STD booths to provide long distance telephone services. Again in the 1990s, the country established thousands of private computer software training institutes to impart employable skills. Based on the success of the Grameen Bank, cooperative, NGO and private sector micro-finance organizations have provided credit to millions of tiny-scale entrepreneurs throughout the developing world and the movement is still growing. These striking examples of organizational innovation barely scratch the surface of the social potential. Countries vary enormously in the types and quality of their social organizations. Cataloguing the range of institutions in each field and comparing the methods and systems by which they operate will reveal enormous untapped

potential for every country.

8.4 Technological Innovation

For 10,000 years after the invention of agriculture, an agrarian, land-based economic model was dominant. Two hundred years ago the resource-intensive Industrial Revolution began to rapidly transform the global economy, a transformation which has still yet to reach more than a third of humanity. Without waiting for that process to be completed, advanced levels of society have already moved into a post-industrial service economy in which human capital has become the primary resource for wealth generation. There is no inherent reason to assume that all people in all countries need to traverse the long, slow path followed by those who have led these transformations. Indeed, we find abundant evidence from the meteoric rise of Asia that what took centuries to develop can be acquired in a few decades. There are countless examples of how education enables the children of illiterate peasants to become successful business leaders and outstanding scientists. Technology also abridges evolutionary time. Farmers in India access market prices over cell phones and the Internet. Peasants in South America have directly traversed from traveling by llamas to flying in airplanes. The present slow process of economic transformation is inevitable. Models and strategies can be formulated to orchestrate a rapid transition that bypasses intermediate stages and moves hundreds of millions of people into the knowledge society that is emerging in which the individual is the basic unit of wealth-creation. A report to the Club of Rome by Gunter Pauli identified the potential for creating 100 million new jobs within the next 10 years by adopting new ecologically sustainable technologies.⁵⁴

8.5 Internet-based Self-employment

The emergence of the Internet has opened up an entirely new field of employment and self-employment opportunities accessible by workers and deliverable to customers anywhere in the world. The internet combines technical innovation with organizational and social innovation. Though attention has focused on direct job creation by major corporations in the IT and business outsourcing industries, huge numbers of job opportunities are also being created for individuals in fields such as research, marketing, publishing, translation, education, business and other types of consulting, vocational training, website development and management, e-conferencing, e-commerce and other fields. Largely unknown to the public-at-large, the potential for Internet-based self-employment remains vastly underutilized. Research is needed to document the full range of Internet-based self-employment opportunities with the potential for large scale job creation and formulate strategies for effective exploitation of this potential.

8.6 Job Guarantee Programs

Constitutionally affirming and legally supporting the right to work provides the very strongest foundation and political will for achieving full employment. This does not mean that government should become the sole or principal job provider as in former communist countries. Rather it means that government should accept the full responsibility and exercise all of the policy instruments available to it to achieve and maintain this goal. Short term, that may well include temporary reliance on government supported job creation programs, such as the US Civilian Conservation Corp during the 1930s. In 2005 India launched a National

Rural Employment Guarantee Scheme on similar lines, which presently guarantees 100 days of employment per year to more than 45 million families. Unemployment results in high social costs that are normally overlooked, including losses resulting from school dropouts, health and psychological problems, poverty, crime, social unrest and even terrorism. Studies indicate that government-sponsored employment guarantee programs of this type can be a cost-effective option for at least temporarily filling job shortages.^{55,56,57}

8.7 *Global Minimum Wage*

As Harlan Cleveland so rightly perceived, the real driving force for wealth creation in the 20th century was the rising expectations of ordinary people everywhere. Continuous economic growth requires a continuous increase in effective demand for goods and services, which can only be achieved by raising incomes of the aspiring masses at the lower levels of global society. China and India have been recognized as the world's future economic powerhouses because they have hundreds of millions of people eagerly desirous of a better life and willing to learn and work to achieve that objective. Henry Ford doubled the wages of his factory labor, so they could afford to buy his cars. Raising the minimum wage in every country to the level required to comfortably meet all human needs will create the most powerful economic stimulus imaginable. Higher wages at lower levels will stimulate untold economic expansion. As Randall Wray has argued, even if sovereign governments simply create more money to raise the incomes of the lowest levels of society, the economic multiplier effect will more than compensate for the costs.²⁸ Global recognition of the right to employment combined with a coordinated global effort to systematically raise incomes at the lower levels of the society will provide the policy base for accelerated growth of incomes and employment the world needs to meet the economic needs, security and welfare of all human beings.

The World Academy's *Global Employment Challenge* identified a number of other strategies that illustrate the very broad range of options available for accelerating short, medium and long term job growth by stimulating the underlying process of social development that constitutes the foundation for economic progress and human welfare.³⁰ A combination of these and other strategies can be applied to dramatically reduce unemployment in both developed and developing countries.

8.8 *Proposal for Pilot Projects*

This paper has explored a range of theoretical and practical issues related to meeting the global employment challenge. It calls for the development of a wider conceptual framework that views employment as one dimension and component of the broader development of society as a whole. The central argument is that the potential for employment generation is unlimited because it is based on the unlimited potential of individual human beings and groups to develop new ideas, values, knowledge, skills, capacities and organizations for self-augmenting social development. The value of theory is best demonstrated by practical application. Therefore, the World Academy and the Club of Rome are jointly exploring the possibility of conducting a pilot project in one country or region of a country designed to dramatically accelerate employment generation through a fresh approach.

9. Evolving a Global Perspective of Employment

The remarkable performance of the global economy in generating new jobs over the past half century has been largely overlooked because employment is viewed primarily from the perspective of individual nations, rather than from the perspective of the world as a whole. It is easy to spot the loss of jobs resulting from outsourcing of production to foreign countries or adoption of mechanized production processes. But the overall effect of social change on the global economy is far more complex and difficult to measure. Jobs that move overseas today help spur income growth in other countries that results in higher consumption, greater demand for imports and greater job growth in other countries sometime later.

These facts do not mitigate the real negative impact of short term job losses, especially those that have come on very rapidly as the result of the international financial crisis. Individuals and some countries may be impacted quite severely by macro level global trends in the short term. Short term problems justify aggressive and innovative measures to cope with a localized problem, but they do not necessarily imply an insoluble problem, either for any individual nation or the world-at-large. The medium term prognosis is quite favorable for creating full employment at the global level.

To understand and fully respond to the challenges of rapid social transformation, we need to develop a comprehensive social theory of employment as well as global models which reflect the complex interacting forces that are reshaping world society in ways that differ substantially from earlier periods in history.

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Grossly Distorted Picture: GDP Still Misleading*

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1. Beyond GDP: Global Poll

A new global poll across 12 countries reveals that more than two-thirds of people polled think that economic statistics like GDP are an inadequate way of measuring national progress.

The poll finds that 68% believe that health, social and environmental statistics are as important as economic data, and that governments should also use those to measure national progress.

However, the findings also show that support for going 'beyond GDP' has slipped back in some countries since the last time the survey was conducted, in 2007.

Almost 12,000 people across industrialised and developing countries were interviewed for the poll by GlobeScan, in collaboration with Ethical Markets. The findings show that Germans (84% of whom want governments to also focus on health, social and environmental data to measure progress) are the most dissatisfied with GDP, followed by Brazilians (83%), Italians (79%) and Canadians (76%).

In the UK, where Prime Minister David Cameron has an initiative to develop new measures similar to Canada's Index of Wellbeing, 70% favour going beyond GDP in measuring national progress. However, support fell from 80% in 2007.

Falls in support, including India (70% to 37%), Kenya (71% to 50%) and France (86% to 72%), are addressed in the report. Support increased in Canada (65% to 76%), Brazil (69% to 83%) and Germany (71% to 84%).

The telephone and in-person survey of 11,969 adults in 12 countries was conducted between June 24 and September 11 2010 by the international polling firm GlobeScan. Results are considered accurate within +/- 3.0 to +/- 3.5 per cent 19 times out of 20. The poll is part of a 26-country global study.

These findings show that there is very strong public support for going beyond GDP. Yet GDP scorecards are still misleading governments, banks and investors by omitting indicators on future trends and national assets: infrastructure, well-trained workforces and productive ecosystems – all valued at zero in GDP.

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Market predictions of defaults of EU member countries are based on their GDPs – which short-changes their real wealth. Resentment at the unfairness of the bailouts in the EU and USA has emerged as financial markets shifted costs to governments and taxpayers. Many broader indicators now available can help investors and nations find new paths out of austerity and recession, including the UN’s Human Development Index, the Calvert-Henderson Quality of Life Indicators and the Green Transition Scoreboard.

2. GDP Omits Asset Accounts[†]

The GDP results, however revised for the final quarter of 2010, will remain unreliable in charting recovery and progress in Europe, the USA and most other countries. GDP is now a Grossly Distorted Picture! The new survey Beyond GDP, for release by GlobeScan and Ethical Markets (USA and Brazil), polled in Australia, Brazil, Canada, China, France, Germany, India, Italy, Kenya, Russia, the UK and USA, reaffirms the large majorities favoring reform of money-based GDP with many available indicators of health, education, infrastructure, poverty gaps and environmental quality found in their 2007 survey for the European Commission.[‡]

Statistical agencies are still on automatic pilot, grinding out GDP, an inaccurate “rearview mirror,” omitting vital indicators of future trends. The chorus of critics of “GDP fetishism” now point to many more accurate indicators forecasting national wellbeing, sustainability and quality of life. Britain’s David Cameron has ordered his Office of National Statistics to develop new measures by 2012, similar to Canada’s Index of Wellbeing.

The Beyond GDP survey’s implications mirror those of the 2009 Stiglitz-Sen Commission to French President Nicholas Sarkozy, that GDP had become a “fetish” and it was time to move on, as I reported. The Commission made a good start – but did not address the worst aspect of GDP’s distorted picture: the lack of an asset account. This continues GDP’s overstatement of indebtedness, still causing trouble in EU countries, including Ireland, Greece, Portugal, Italy, Spain and recently Belgium – not to mention the USA (with many states facing deficits). So, the Grossly Distorted Picture in current GDP only records levels of public debt for vital infrastructure and public services (police, fire protection, teachers, etc.). Omitted is an asset side to account for valuable taxpayer investments in public infrastructure: transport, ports, railways, schools, etc., many of which last for over 50 years and should be carried on the books, just as they are on corporate balance sheets. Imagine trying to run a company this way!

If GDP included an asset account (as many economists favor [see my “Statisticians of the World United!”]) this would reduce nations’ perceived public debt levels substantially – and so also reduce their interest rate on sovereign bonds! Instead, financial markets and “bond vigilantes” are buying credit default swaps (CDSs), speculating that several EU countries will default and betting on the fate of the euro. This raises interest rates on sovereign bonds and “deficits” even higher – leading to tragic, unnecessary “austerity” cuts.

Reasons this “GDP fetishism” continues include deregulation, the growing influence of money and finance in politics. Special interests and their allies in politics and in ministries

[†] This section was first published on CSRwire Talkback. Available online at <http://csrwiretalkback.tumblr.com>.

[‡] For more information on the survey, see <http://www.globescan.com>.

of finance, economic development, trade, central banks and stock markets grew to dominate governments' policies. They focus on 24-7 global stock and bond markets in mainstream media. Financial players benefit from GDP measures of growth, which ignore future trends, infrastructure, social and environmental costs, while mainstream economists claim fixing GDP is too difficult.

Yet, many companies, CSR and SRI investors have shifted to “triple bottom line” accounting. They and the public in this survey can see real wealth and the bigger picture: well trained work forces, efficient public infrastructure and productive ecosystems in EU and other countries – all counted at zero in GDP!

GDP's macro-economic, money-denominated, over-aggregated methods ignore “externalities”... a relic unnecessary in our Internet age, which enables multi-disciplinary “dashboards” of indicators and metrics. GDP is superseded by these new systemic scorecards (www.calvert-henderson.com and www.greentransitionscoreboard.com) – with websites displaying all vital areas of quality of life and true progress.

Biopolicy – Building a Green Society

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1. Biopolicy to Meet the Global Economic and Environmental Challenge

It is not only the global economy that is facing a deep recession, but also the global environment. Unavailability of credit and loss of jobs and income, coupled with climate change, energy insecurity, pollution of the air, water and soil, and the decimation of species and habitats, are creating an unprecedented world challenge and responsibility. A coordinated response to this dual challenge could build a vibrant new economy and restore the environment through initiatives for clean energy, the protection of biodiversity and decent jobs for all. The task is both enormous and urgent.¹

As also emphasised by the editorial board of *Cadmus* and analysed in great detail by all contributors in the journal's first issue, the idea of rethinking our economies has been gaining support, and it is high time to begin a fresh examination of current economic theory.² For the economy to regain momentum, it must become an instrument to protect *bios* – life, the most precious gift on our planet. This requires new ethics and new policy – biopolicy – to help implement worldwide action for environmental sustainability and security, and to build a “green society” of hope. For the past 25 years, the Biopolitics International Organisation (B.I.O.) promotes these new development paradigms by infusing environmental thinking in every human endeavour.^{3,4}

Our response to the global financial crisis should be used as an opportunity to make us mobilise our efforts to tackle growing environmental problems as well. The interdependence of interests is obvious. We need to forget the paradigms of the past where the neighbour was considered a dangerous “other” and where differences in culture or religion were a source of alienation and power games. We need to give priority to a new dimension of profit; not only in terms of money, but also in terms of values and ways of rebuilding society.⁵

Small additions to past patterns are no longer sufficient. Economic growth with concern for goods and income alone is not viable. By encouraging over-consumerism, we are running towards a cliff. It is time for health, education, natural capital, water, food, biodiversity, culture, intellectual sharing, productivity, peace and security to be quantified and to assume their rightful place in a *three-dimensional* approach (Fig 1) to economic growth. If we take into account the cost of environmental catastrophes, such as floods and earthquakes, as well as increased migration due to environmental deterioration, the integration of environmental issues into investment decisions is more urgent than ever.⁵

We cannot discard the old system within a day, but we can make big steps by introducing a new scale for evaluating “quality of life” and for encouraging an economy where the harmony and beauty of life are truly respected and appreciated. In this context, safeguarding the environment needs to become a concrete asset of every national economy. Financial success needs to be evaluated on the basis of improving living conditions on the entire planet, and contributing to the most pressing task of reversing destructive trends. Cultural wealth, the preservation of natural resources as a measurable part of a nation’s prosperity, better health, and education are a “genuine” profit for society.

Today, we have the wisdom to control economic progress and we should apply it to its full extent. We can use the knowledge gained to successfully exit the current crisis and improve the world for the generations to come. The beauty and wealth of natural, cultural and historical diversity can build a positive framework for the future. Once our economies become based on long-term, life-supporting financial policies, they will be more efficient in sustaining growth in the future.⁶ Once world leaders acknowledge the urgency of protecting the environment, they will be more successful in fulfilling the needs of the community, the country and the world.

Figure 1. The environment at the core of the global economy

Bio-Environment	
Quality of Life	• Health - Safety - Justice - Happiness - Co-existence with all forms of life. External and Internal Wealth - Micro-Environment - Macro-Environment
Ethical Values	• Diachronic Values for Society - New Criteria for Business Compatible with Quality of Life
Legislation	• National - Global - Bios Rights - Bio-Diversity - Global Warming - Ozone Depletion - Overpopulation - Poverty - Deprivation
Macro and Micro-Economics	• Time and Space Scale - Historical Perspective - Millennium Approach - Cleaner Production
Bio-Diplomacy	• Interdependence - International Cooperation - Third World Viewed as Partner
International Commerce	• Durable Development - Internalizing External Costs - Consumer Protection
Governance	• New Models of Participatory Democracy - World Referendum - Defense for Bios
Education	• Biocentric Curriculum in Economics - Satellites in Education
Media and Communications	• Internet Communication Feedback - Satellite Diffusion of Information - Marketing
Energy	• Protection of Resources - Study of Bios Models
Employment	• New Opportunities for Employment in Bio-Environmental Protection - Green Salary for Unemployed
Culture	• Arts, Cultural Values, Traditions

Three-dimensional economics – first proposed by B.I.O. in 1995 – emphasises the relevance of the environment on all economic actions. For the world economy to recover, it must become linked to long-term global environmental policy.

2. Green Salaries

The mitigation of environmental degradation is an overwhelming global mission, but it has also created new opportunities for employment and economic growth by spurring the need for innovation and skills. Environmental improvement jobs have benefitted many economies by providing the work force and their families with money to spend, which is then recycled through the economy. The environmental projects established may require equipment and materials, which must be purchased so that opportunities are created for new markets to develop. The eventual improvement of the environment is itself an economic benefit, allowing for productive use of the restored environment for resource management, wildlife habitat, parkland or tourism.

The problems of environmental degradation and unemployment may appear, at first glance, to be unrelated. However, numerous opportunities exist for linking the two through the concept of “green salaries,” a proposal put forward by B.I.O. in order to promote employment that also improves the environment and curtails climate change, pollution, loss of biodiversity and resource depletion.¹ The Green Salary can also help to elicit a positive feeling among the unemployed, in addition to providing new opportunities for work and aiding the attempt to lower unemployment levels. Moreover, businesses could be granted special tax deductions and other financial privileges when providing opportunities for the unemployed to be involved in environmental projects. The creation of green jobs, particularly for youth, is an imperative for regenerating the world’s economies. Sustainable employment opens the possibilities for disadvantaged groups and youth to develop their employment potential and also creates new jobs and work opportunities, which is an ethical imperative in a responsible economy.⁷

Too often, people view the protection of the environment as someone else’s job. They consider that industry or the government should have the responsibility for cleaning up pollution. If we are to succeed in reversing global environmental degradation, people everywhere must be imbued with a love and respect for the environment.

3. Bio-education for a Global Responsibility

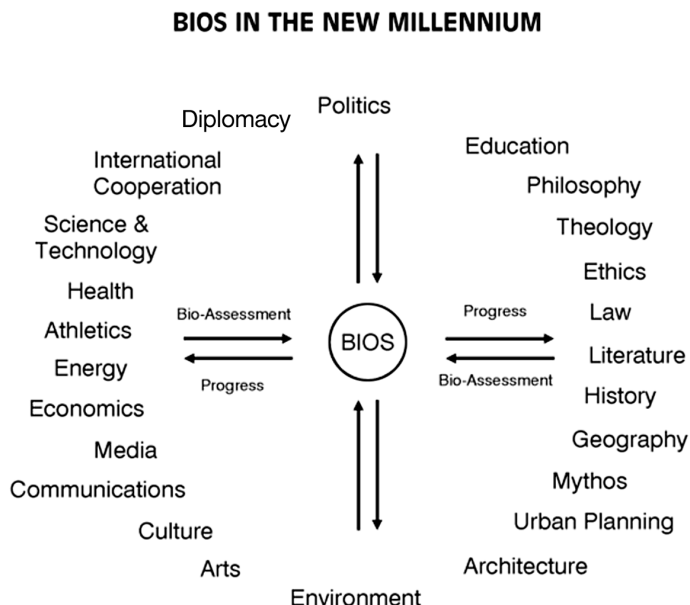
The best way to protect bios today and for future generations is to foster an environmentally aware and motivated society that values and nurtures the environment. This is the goal and vision of bio-education, which promotes environmental protection at the core of every academic and professional initiative.⁸

The purpose and responsibility of bio-education is to uplift the spirit of humanity and to reverse the crisis in values. By providing interdisciplinary models with environmental considerations in every speciality, bio-education seeks to apply environmental protection to every human endeavour. (Fig. 2)

To advance this vision, B.I.O. launched the International University for the Bio-Environment (I.U.B.E.) in 1990. This educational initiative urges scholars, decision-makers, diplomats, business leaders, teachers and students to actively contribute to the development of an environmentally conscious society. Bearing in mind that universities should be, by definition, “universal,” the I.U.B.E. promotes a model bio-education and acts as a catalyst to

accelerate environmental awareness and impart a biocentric message to students and training professionals around the world.⁸ Leading educators and decision-makers infuse existing educational institutions with bios promoting values.

Figure 2. Bio-education promotes environmental values in every academic discipline



The essence of bio-education is the incorporation of environmental thinking in all academic disciplines and all educational levels. Environmental issues can be applied to fields as diverse as theology, philosophy, diplomacy, economics, law and architecture, helping to assess future progress.

I.U.B.E.'s e-learning programme, a series of online environmental courses, is an essential vehicle for making bio-education available to as many individuals as possible that has so far elicited the participation of representatives from 119 countries. The goal of these courses is to address the urgent need to improve quality of life and to mobilise each individual to participate in protecting our common environment and its rich biodiversity. By using technological advances in this positive way, a uniquely rich source of information and training material can be placed at the fingertips of teachers, students and professionals around the world.

4. Bio-assessment of Technology – Securing the Continuity of Life

Technology is advancing at a breathtaking pace. What was considered groundbreaking yesterday is commonplace today and will be obsolete tomorrow. Technology expands human potential, but can also have disastrous consequences if it proceeds without concern for its social and environmental impacts. Time and again, we have witnessed the emergence of new technologies which promised positive change, but which ultimately created greater problems

than they solved. An analogy can be drawn between the current economic crisis and the risks posed by new technology that has not been thoroughly evaluated. The cause of the recent global economic meltdown has been attributed by many to the widespread acquisition of new and highly risky financial instruments. These instruments were unregulated, and when they began to collapse, they took some giants of finance and the global economy with them. Similarly, new technologies which have not met rigorous scientific scrutiny may also have severe and unintended consequences. There is an urgent need to provide international oversight of new technologies that will confirm the safety of their use to humans and the environment before they are applied to consumer, commercial or other uses.⁹

A “bio-assessment of technology,” ensuring technological and economic progress that support the environment would bridge the gap between technology and societal values.^{3,4} In a dialectic exchange of views, presenting a thesis and antithesis and then creating a synthesis of new concepts, ways of reducing negative environmental impact could be identified so as to truly benefit from the contributions of technological breakthroughs. Emphasis should be placed on the eradication of factors causing the decline of values in society, to harness environmental deterioration, species extinction, water and atmospheric pollution, climate change, soil erosion, acid rain and nuclear waste. This is a crucial responsibility for humanity if we are to develop technologies that respect and protect bios.

In our global effort to defend life, genetic diversity should not be overlooked. The true wealth of our planet is in the sheer breadth, richness and beauty of plants and animals. However, many of these species are being lost by resource plundering, and careless economic growth. B.I.O. proposes that we safeguard this wealth of life on our planet by creating *genetic banks* which preserve the genetic material of endemic plant and animal species and thereby protect biodiversity. The new technologies available in the field of genetics can be applied to preserving genetic variety in urban green spaces and stimulate wider interest and knowledge of the natural world. The preservation of genetic material can also be used in programmes relevant to human diseases and, therefore, have wide applications in medicine. In rural areas, local genetic banks can preserve genetic material from endemic crop species. This can help to restore genetic variation in agricultural crops and result in pest-resistant, high-yield varieties which do not depend on chemical fertilisers.¹⁰

5. Towards a Renewable Energy Economy

The consumption of energy drives the engine of our urbanised society. However, the impact of energy based on fossil fuels on the global environment and its contribution to climate change make it imperative that we develop more sustainable energy sources.¹¹

Clean energy is free and inexhaustible. More in-depth research will help us to overcome the hurdles that exist in order for renewable energy to be used on a larger scale. The potential of solar energy is enormous and should be deployed as the primary source of energy by most countries, especially those with abundant sunlight. Wind farms are more and more common, and many economies are benefiting from this system of generating electricity that is both very reliable and almost pollution-free. The broad range of current and prototype fuel cell and hydrogen developments taking place in the field of transportation has led to better functioning electric automobiles with no noise pollution and no exhaust gases. Soon, current

modes of transportation will be replaced by electric vehicles. These developments will lead to a greater and wider use of hydrogen cells, which is quickly becoming the wave of the future.

In this effort, inspiration can be drawn from biological models. *Algae* are tiny biological factories that use photosynthesis to transform carbon dioxide and sunlight into energy. Algae can grow in salt water, freshwater or even contaminated water, at sea or in ponds, and on land not suitable for food production. Moreover, algae should grow even better when fed extra CO₂, the main greenhouse gas, and organic material like sewage.

A *microbial fuel cell* (MFC) converts the chemical energy found in a substrate directly into electricity. To achieve this, bacteria are used as a catalyst to convert substrate into electrons. The bacteria are very small (size approximately 1 μm) organisms which can convert a huge variety of organic compounds into CO₂, water and energy. The micro-organisms use the produced energy to grow and to maintain their metabolism. However, by using an MFC, it is possible to harvest a part of this microbial energy in the form of electricity.

Hydrogen has unique potential for reducing today's dependency on fossil fuels. Hydrogen can be produced from renewable resources, such as water and agricultural products, eliminating the net production of CO₂ and helping to alleviate global warming. The transition to a hydrogen based economy begins with the commercial production of hydrogen-based fuel cells, where it is efficient and intrinsically clean, for all end-use applications. Additional research is needed in this area to reduce the cost of hydrogen production, solve hydrogen storage problems and in the longer term, integrate renewable energy sources into hydrogen fuel production.

A large-scale embrace of alternative energy would also create new jobs in the design, manufacturing, installation, servicing, and marketing of new technologies and products. Jobs also arise indirectly from the supply of raw materials, transportation, equipment, and professional services. In the transportation sector, the use of hydrogen and fuel cells are creating a new concept of car technology and new areas of research and development. Advancements in solar energy and the use of environmentally friendly construction materials have led to the creation of green buildings. Some green buildings are now completely and solely powered by solar, thermal and electric energy that operates all systems, including heating, cooling, lighting, computers, water pumps, and office equipment. As incentives, companies could be granted tax cuts or other financial privileges for engaging the unemployed in jobs that minimize greenhouse gas emissions, promote the use of clean and renewable energy, and contribute to the overall effort to combat climate change.^{1, 10}

6. Bio-diplomacy – Defence for Bios

It is evident that the models of the past are not adequate to help us deal with today's environmental challenges. To overcome negative trends, it is time for citizens to set aside their differences and to proclaim their willingness to save the environment and ensure the continuity of life. Economic growth cannot be achieved on a planet ravaged by pollution, hunger and disease. The over-exploitation of environmental resources will not lead to long-term prosperity. What is urgently needed is a common strategy, a global defence protocol against climate change, the loss of biodiversity and natural resources, environmental

pollution, and the deterioration of land and water ecosystems. Just as all the parts of the human body need to function together in harmonious coordination to maintain a healthy individual, modern society desperately needs a common vision to secure a harmonious and peaceful future.^{3, 4, 10, 11}

Bio-diplomacy – a concept pioneered by B.I.O. at a time when the world community had not fully realised the urgency of adopting common environmental policy – focuses on the interdependence of all forms of life. It supports efforts to maintain biological and cultural diversity and seeks to improve human relations and to attain world peace by replacing current diplomatic attitudes with a complete international and intercultural perspective. Within this framework, respect for human rights and the existence of multi-ethnic and multi-cultural societies is an undeniable principle. International cooperation in environmental protection enhances quality of life and strengthens efforts for peace and security.

Bio-diplomacy is an opportunity for the aspirations of sovereign states and civil society to converge in pursuit of long-term policy and action, enhancing a spirit of solidarity among states. It recognises that cultural differentiation constitutes the wealth of the body of humanity. Humanity is part of the overall body of bios, where DNA, the genetic code for every living organism, is the link connecting all forms of life. Environmental threats are international problems. Trees, the source of oxygen on our planet, can be considered the “lungs” of the body of bios. When a person’s lungs are damaged, the entire body suffers. Similarly, the widespread destruction of trees and forests that we are seeing today has drastic implications for the health of our entire planet. The required solutions entail the development of bold plans of action for international co-operation. Nations must declare war on environmental destruction and abuse. Foreign policy should shift from a fragmented, competitive framework to a vision of unity and interdependence. Bio-diplomacy seeks to improve human relations and attain the goal of world peace by replacing current diplomatic attitudes with a comprehensive international and intercultural perspective.^{3, 4, 10, 11}

6.1 Re-channelling Defence Infrastructure

B.I.O. believes that the greatest challenge for the 21st century will be the permanent reconfiguration of defence infrastructure into programmes for the defence of the planet. The nations of the world must stop investing in instruments of destruction and begin investing in instruments of peace for the protection of our common environment. Competition to find better methods to destroy life should be replaced with cooperation to find ways to save it. Time is of the essence, and this new vision is urgently needed.^{3, 4}

National defence is a major priority among most nations of the world. A substantial portion of national budgets is committed to the maintenance of armed forces and the acquisition of weapons, such as highly sophisticated fighter aircraft, warships, submarines and missiles. Globally, about 10% of central government budgets are devoted to defence.

The environment, as a common point of reference, can bring all peoples of the world together, in a state of harmony and the absence of war. The conversion of war regimes to programmes for the preservation of the environment would guarantee a better future. Such a programme would not have negative economic effects, but rather, it would stimulate the global economy and provide jobs, since existing defence industries would be re-tooled into

“defence-for-life” industries. Existing defence manpower and equipment can be adapted for peaceful tasks such as reforestation, water resource clean up, soil erosion recovery, protection of the ozone layer and de-contamination of areas affected by nuclear radiation. These problems represent real threats to the continuation of life on our planet, and no human resource should be spared in the effort to contain them.

The military offers a disciplined and trained source of manpower, readily available equipment such as road vehicles, ships and aircraft, communications and transportation capabilities, trained medical staff and logistics like tents, food and blankets. It has engineering capabilities and can work on civil projects, such as building or repairing roads, hospitals and schools. This resource has been already used to respond to natural disasters and to provide humanitarian assistance in areas ravaged by poverty and disease. In the same way, the military can apply its resources and know-how to work on projects of environmental restoration, including reforestation, erosion control, habitat and species protection, tree-planting, bringing fish back to the oceans, and cleaning up contaminated waters and soils.¹

7. Bank of Ideas – Facilitating our Response to Environmental Challenges

To be effective in our response to environmental challenges it is essential to stop re-inventing the wheel. It has been one of the main objectives of B.I.O. for many years to raise awareness of the importance of the development of an internet based “Bank of Ideas”, where any interested party may contribute information and expert advice across a broad range of sectors, in order to help coordinate environmental protection efforts and harness valuable resources.^{3, 4, 9} The creation of such an electronic resource would also facilitate an expedient transfer of know-how as to how to face environmental emergencies when immediate action is of the essence before it is too late.

The Bank of Ideas can also facilitate the jobs-environment link by providing widespread access to information on training, jobs, products, industry regulations and R&D related to the environment. It can identify job-training programs which teach job skills complementary to the environmental industry across a broad range of sectors, and include a training component which would give people the skills needed to find permanent employment in the environmental industry. It could also provide a list of relevant and available positions that job seekers can access in their job search.¹

Another component of the Bank of Ideas initiative could be the training of individuals to respond to environmental emergencies, such as oil spills, release of toxics into the environment, or natural disasters such as floods, earthquakes and wildfires. Emergency response teams could be trained and formed which would be available to respond at the time of an accident or natural disaster, complementing the efforts of the defence infrastructure as mentioned previously. Moreover, as the Bank of Ideas would welcome the contribution of every citizen, it would offer a global platform in guiding world leaders and policy framers toward more enlightened decision-making and environmental leadership.^{3, 4, 9}

8. World Referendum

In the effort to create a more just and sustainable global economy, we need to forge

a partnership of purpose that involves the whole world. With the tools made available by modern technologies, governments everywhere can better focus on the true needs of their citizens. Breakthroughs in the field of telecommunications provide the opportunity for the public to be actively involved in issues concerning our daily lives and to be able to cast a vote through the internet and other communication link-ups, which can make immediate feedback possible from any corner of the globe.

It is the purpose of the B.I.O. World Referendum, first proposed in 1991, to transcend national boundaries and bring the world together in a common cause.¹² In today's complex society, nations seldom share priorities. Climate change and other environmental concerns are possibly the only issues that are relevant to all the nations of the world. Furthermore, environmental degradation and resource depletion are often the impact of extreme poverty on the planet. A simultaneous electronic ballot on saving bios is a brilliant opportunity to demonstrate that, as citizens of the world, we can all agree on safeguarding the Earth for the generations to come.

Decisions on our common future should no longer rest solely on world leaders, who can evade or even obstruct meaningful change. Every individual, whether poor, underprivileged or not, can and should be involved. By giving priority to individual voices to be heard, the World Referendum can elicit the personal involvement of every citizen in the race to save the environment and help to bridge the gap between the rich and poor.

With the first decade of the new millennium already behind us, we need to act quickly to replace the mistakes of the past with positive action for a future where world peace, health, education, and respect for bios will be a reality for every citizen. The timely support of dedicated thinkers and doers will help to implement the World Referendum and to arrest the escalating environmental and economic crises which are occurring at such a rapid pace. Both institutions and individuals are requested to participate in this global campaign. The flexible nature of the World Referendum allows for immediate changes in the attitude of people throughout the world by creating an awareness of existing threats and raising the respect and understanding of bios.

9. Building a “Green” Society

Escalating economic and environmental instability worldwide is making it clear that we need governance with a vision. Ensuring our planet's health and security is our fundamental responsibility to future generations. To rise to this global challenge, decision-makers need to avoid the mistakes of the past and find inspiration in life-supporting development models. The time to change is now. Politicians must place the environment as a priority, not because of public pressure, but because of personal commitment.

A new structure of society and governance is needed to enable us to overcome the current crises. A “green society” of security and transparency, where bios is valued over greed and where peace and harmony replace discord and destruction, can help us understand and value the multiple links between the environment, the economy and the future development of society. *Techne* and technology must join forces to help achieve a better quality of life and to provide a vision of hope and joy for present and for future generations. By giving priority to individual voices to be heard through a World Referendum and by encouraging

the participation of every individual and every profession in Environmental Olympics we can elicit the personal involvement of every citizen in the race to save the environment.

The clock is ticking. Can we hear it and act now, or will we face the continued decline in our environment and quality of life? The pursuit of narrow self-interest at both the individual and national levels has resulted in a global crisis which threatens world peace, as well as the natural environment and human prosperity. We urgently need to change these trends by building a responsible and sound economy that can lead humanity to a brighter future. A bios-promoting vision that places the ethics of bios at the heart of societal structure can provide the necessary framework to achieve a world in which the gift of bios is truly appreciated.

The need for action is now. Climate change is accelerating desertification, plant and animal species are disappearing from the earth at unprecedented rates. Human populations are being displaced and driven to poverty and disease, the credit crunch is affecting consumers' environmental efforts across the globe. Humanity can no longer afford to disregard the close relationship between its actions and the environment. Meeting today's challenges requires new ways of stimulating creativity in politics and policy-making, technology, industry and commerce, in education and the arts and social and community development. The widespread adoption of environmental thinking is the only way to alleviate economic instability and create a new green society of hope.

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Towards a Global Democratic Revolution A Global Parliament and the Transformation of the World Order

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1. The Limits of National Democratization

The peaceful mass protests of millions of Egyptians that toppled the repressive and corrupt presidency of Hosni Mubarak in the course of 18 days and the ouster of Tunisia's President Zine El Abidine Ben Ali after massive civil resistance might turn out to mark an important milestone in the expansion of democracy in the world.* Over the last ten years the strong trend towards democratization that followed the end of the Cold War slowed down and at last it seemed that it might even reverse. In the five years from 1989 to 1994, the share of democracies in the world as counted by Freedom House in Washington D.C. jumped from around 40 to 60 percent. In 2005 and 2006, the share peaked at around 65 percent and then declined continuously until last year, back to the level of 1994.¹

International polls, however, have shown unabatedly strong popular support for democracy in all world regions, including, for example, an average of around 80 percent of respondents in the Middle East.² In fact, democracy is now almost universally recognized as the only legitimate form of government. Even the most autocratic regimes are required to maintain at least a democratic façade. The revolts in Tunisia and Egypt inspire protesters and advocates of democracy in autocratically ruled countries and might trigger a domino effect. A successful democratic transition in Egypt, achieved by a democratic mass movement, would constitute a watershed in the region and beyond. This is at least the hope that lies behind comparisons with the fall of the Iron Curtain in 1989.

The revolt in Egypt is also an inspiration for all those who advocate a more democratic world order and the creation of a world parliament. The protesters in Egypt had enough of being condemned to being passive subjects that had no say in the affairs of their country. Many people have a similar feeling with regard to international affairs. Citizens are excluded from international decision-making as this takes place exclusively between government executives. At the same time, more and more subjects are negotiated and decided upon at the international level, for example the future of the global financial system or climate change mitigation. Globally integrated economic and financial markets and climate change have made the idea of democratic national self-determination obsolete. It is impossible, for instance, to escape from the impacts of rising food prices that result from the international commodity markets.

* This article reflects events up to February 15, 2011

What at first glance seems like a loss of autonomy is at least in parts a method of governments to protect their agenda against societal interference and to weaken democratic accountability. As Klaus Dieter Wolf argues, “Intergovernmental governance offers states the opportunity of making mutual self-commitments of a kind that can remove certain issues from societal debate and also from any possible revision”.³ The political agenda-setting of the informal G-20 process is an example; another recent one is the so-called Anti-Counterfeiting Trade Agreement (ACTA) that has been negotiated over years in secrecy. National parliaments, except maybe the U.S. Congress, normally have no alternative than to accept unconditionally what governments have negotiated amongst themselves. From this perspective, the stark contrast between the alleged support of democratization in the world and the almost complete lack of action to democratize the international system is no surprise.

2. Transnational Democratization

Those who are engaged in building democracy in their countries and who are animated with a fresh spirit like in Egypt will have to ask themselves: What purpose does it have to build a democratic nation if it is embedded into an undemocratic and non-transparent international system? In a globalized world the confinement of democratic participation of citizens to the institutions of the nation-state is almost equivalent to disenfranchisement. True democratic emancipation cannot stop at national borders. As former UN Secretary-General Boutros Boutros-Ghali explained, “Democracy within the state will diminish in importance if the process of democratization is not extended to the system of international governance as well.... This project includes the task of giving the world’s citizens a more direct say in global affairs. A direct link between global institutions and the people on the spot needs to be established.”⁴

In fact, there is another aspect of democratization that has not attracted much attention so far but which is no less extraordinary. There is a forceful and increasing trend towards stronger interaction of elected representatives across national borders and towards the creation of formal mechanisms for their inclusion into intergovernmental organizations. According to a recent study by Claudia Kissling, more than 100 international parliamentary institutions exist today, around 70 of which have been established since 1999.⁵ Most important are the formal parliamentary organs of international organizations such as the European Parliament, the Pan-African Parliament, the Parlamento del Mercosur or the OSCE Parliamentary Assembly.

This trend confirms the need and the merits of complementing intergovernmental cooperation with parliamentary representation. However, the trend has not yet reached global intergovernmental organizations. Neither the United Nations (UN) nor any of its numerous specialized agencies and programs, nor the World Trade Organization (WTO), the International Monetary Fund (IMF) or the World Bank Group possesses a formal parliamentary body, not even in an advisory capacity. This flaw is one of the main sources of the democratic deficit of global governance.

3. A Global Parliamentary Assembly

The existence of numerous regional parliamentary institutions makes it difficult to argue that in principle it would not be possible to create a global parliamentary assembly (GPA) that represents the world’s citizens at the UN, the WTO or the international financial institutions.

Although for tactical and practical reasons it might be useful that such a body initially be created with limited scope as a consultative body of the UN General Assembly or as part of another organization of the UN system, the aim is that it eventually would be formally related to all major intergovernmental institutions that shape international governance. Permanent Committees, Sub-Committees and non-permanent Inquiry Committees set up by the assembly could deal with specific issues and become related to specific bodies and organizations. Committees could interact on cross-cutting themes and coordinate different approaches. At less frequent plenary meetings the outcomes of the Committees' work could be combined and adopted. As a parliamentary umbrella of global governance, a GPA could help to overcome the fragmentation of the international system and international law. Although the body proposed here is widely known and advocated as a UN Parliamentary Assembly (UNPA), using the term GPA fits better to stress this overarching approach.

A GPA should not be conceived as a mere extrapolation of the institution of parliament as it is known at the national level. It should rather be designed as a formally established and central platform for global deliberation that allows civil society to participate in its work. The assembly's Committees for instance could act as platforms for broad deliberation and should allow for participation of experts and civil society representatives.

In contrast with intergovernmental bodies such as the UN General Assembly, where appointed diplomats pursue their business, the voting members of a GPA would be elected representatives. Initially, the members could be elected by national parliaments, as in the Parliamentary Assembly of the Council of Europe. In the long run, however, they should be directly elected as it is the case in the European Parliament since 1979.

The maximum number probably lies somewhere between 700 and 800 delegates. The assembly could emerge gradually from a much smaller structure. The Global Public Policy Committees suggested in the report of the panel on UN-Civil Society Relations in 2004⁶ or the Global Parliamentary Group "which should develop an integrated oversight of major international organizations of the UN system, the Bretton Woods Institutions and the WTO" proposed by the World Commission on the Social Dimension of Globalization in the same year⁷ could constitute a good starting point.

Population size is generally considered to be a main factor in order to determine the number of members elected per country. At some ideal point in the distant future, every human being should have an equal weight, regardless of the country of origin. In the meantime, a pragmatic system of degressive proportionality needs to be devised that ensures a balance between small and large countries, from China with 1.3 billion inhabitants to Tuvalu with 13,000. Some models developed by the Committee for a Democratic U.N. show that this should be possible.⁸

4. Transforming International Governance

International opinion research carried out over the last decade shows that most people around the world support an international order that is based on international law. Steven Kull points out that "Majorities in most countries believe that international laws create normative obligations like domestic law and reject the view that nations should not feel obliged to abide by international law when doing so is at odds with their national interest."⁹ Whether

compliance with international law, climate change mitigation, enforcement of human rights, support of democracy, nuclear disarmament or strengthening of the United Nations, large majorities of the people all over the world endorse these goals. The citizenry as a whole is much more receptive to global cooperation than national governments. According to Steve Kull, a survey covering 46 countries found that an average of 72 percent also saw themselves as global citizens. In fact, a poll conducted in 19 countries in 2005 established that an average of 63 percent of respondents endorsed “a new UN Parliament, made up of representatives directly elected by citizens.”¹⁰ Yet, only a single government so far has expressed support.

That’s no surprise. As a GPA would be composed of elected representatives that are accountable to their constituents, it would probably tend to be closer to their views than to those of national governments. Its very purpose would be to take a global view and to consider the interest of humanity as a whole instead of narrow national interests. Once a large portion of delegates is directly elected, the assembly would be vested with unprecedented political legitimacy. Through a GPA the world’s citizenry could express itself as sovereign global authority.

While a GPA or UNPA at the beginning could be vested with largely consultative functions, its powers would expand gradually. Eventually it could become a key institution in a global legislative system. As former Czech President Vaclav Havel suggested in a speech at the UN Millennium Summit in 2000, global legislation could be carried out by a bicameral system consisting of an assembly “resembling the present plenary, and the other consisting of a group elected directly by the globe’s population in which the number of delegates representing individual nations would, thus, roughly correspond to the size of the nations.”¹¹

Of course a GPA would only be a part of a much more complex and comprehensive process of transforming the international order into an effective system of democratic global governance. However, its creation may well be the most important single step as it could act as a center of gravity for further change. Such a center is missing. At the global scale, civil society lacks the structure, resources, persistence and coherence to maintain such a center over a long course of time. The permanent NGO forum that was vividly discussed in the 1990s, for example, never came about.

Over the last ten, twenty years, an abundance of high-level panels, expert commissions, policy groups and other initiatives has been producing an endless stream of smart reports on UN reform, the Millennium Development Goals and the need for global governance. No major reforms have been carried out. But without a transformation of the system as such, fundamentally different policies will not be viable at the global level. A GPA is needed to drive the process of world order reforms. No other player is in sight that is capable to do so.

Independent oversight exercised by a democratic body such as a GPA is an indispensable precondition for any sort of global taxation or standing UN peacekeeping forces. Without a GPA, any substantial strengthening of today’s intergovernmental system would only exacerbate the crisis of democracy and global governance.

5. Conclusion

Without doubt, humanity has entered into a new epoch. We are witnessing changes that are frequently compared with the “Gutenberg” revolution. The invention and dissemination

of mechanical printing in the 15th century were a decisive catalyst for societal change which eventually set off the age of enlightenment. The feudal order was swept away by a growing national consciousness of the population, culminating in the French Revolution of 1789 at which the notion of the modern nation state emerged in the Old World.

Similar to the feudal lords in the past, nation states today are also confronted with a changing consciousness. The technological revolution of the last three decades in communications, transportation, information technology and media is having an impact on many peoples and their world views. As Abhay K. commented recently, the invention of the internet and the mass availability of internet-connected mobile phones pave the way for planetary consciousness and global democracy.¹²

A GPA would not only be the result of the momentous change ahead. Quite the contrary, it is probably required as a catalyst for the new global enlightenment. After all, the assembly would be the first institution in human history that creates a direct link between every single human being and the planet, without any intermediary. It would embody the idea that every human being is a responsible member of the global community and not a passive subject of an impenetrable global apparatus, whether its name is G-8, G-20, WTO or IMF.

The struggle for a GPA is not only about shifting power in the international system in favor of the global sovereign, the people. It is also an intellectual struggle.

Addendum

Creation of a world parliament suggested at World Social Forum ¹³

The establishment of a world parliament elected by the world's population was proposed at an event at the World Social Forum in Dakar, Senegal. "A democratic and representative world parliament would be an institution with unprecedented political legitimacy. It is needed to bring globalization under democratic control", explained Jo Leinen, one of the speakers at the event and a Member of the European Parliament from Germany who co-chairs the advisory board of the international Campaign for a UN Parliamentary Assembly. "It is neither possible nor desirable to reverse globalization. But those institutions that control the process to a large degree such as the World Trade Organization or the international financial institutions exclude the citizens of the world from their decision-making. This is no longer acceptable", Mr. Leinen continued.

"The people of the world want to have a say in the affairs that affect them. As more and more important decisions are taken at the global level, this aspiration cannot stop at national borders. Global democratic representation is needed. The goal is to create a directly elected assembly", said Manuel Manonelles, director of UBUNTU-World Forum of Civil Society Networks.

The Senegalese representative of the Campaign for a UN Parliamentary Assembly, Mamadou Ibrahimia Fall, elaborated on the campaign's proposal. "We suggest a gradual approach. Initially, the assembly could be composed of representatives from national and regional parliaments. Over time, a transition to direct elections could take place. Its powers in the international system could be extended gradually as well. At the beginning, the function could be largely consultative."

Coura Ndiaye, an advisor at the Economic and Social Council of the Consultative

Assembly of Senegal expressed how important the activities of civil society are to give initiatives but that a Parliament is necessary to take decisions.

Several participants from Uganda, Sierra Leone, Benin, Great Britain, Norway stressed the importance of building up democratic representation at a global level. It was felt that a more direct connection between the world's peoples and global institutions is needed. The proposal of a UNPA received much applause and support.

The World Social Forum is a major global meeting place of social activists and movements that promote solidarity, democracy and a fairer world. It is considered as a grassroots counter-event to the World Economic Forum in Davos, Switzerland, at which the global elite of the political, financial and economic world come together on an annual basis.

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Governance

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Government is as old as the society. Governance is as recent as 1900. One is a fact of power. The other is a theoretical concept that precedes in Mind before humanity reduces it to a fact of experience. For the mental man, the latter assumes evolutionary significance of extraordinary value. Man when he realises that significance, acquires a Himalayan power to take his destiny into his own hands and organise his collective life with an inconceivably greater power. The birth of coinage, which has resulted in enormous floods of money, is one example of that phenomenon. Man's mental powers always bring such great powers under his complete control, unless he chooses to be a slave of his own creation.

Around 1900 when Governance became a considerable theme for the elite minds, knowledge was ripe to frame itself into a comprehensive theory of human existence. It was given to the world as the philosophy of creation. The Times Literary Supplement reviewing the thesis, found in it all the essential values it contained. More than one Nobel Laureate commended it to the world. Around 1970, we, in the Society, launched ourselves on a theoretical application of that philosophy to social evolution and found it comprehensive as well as precise. It was presented to many leading lights of the world. Harlan Cleveland wholeheartedly responded to it and invited us to present it to the World Academy, when he saw the results of the theory expressed in the activities of the International Commission on Peace & Food (ICPF). Governance was a theme close to his heart. There was a possibility at that time of Governance becoming a dominant theme among the elite of the world, leading to effective action of installing a world government. Instead, the theme of employment took possession of the energies of the Commission, so the theme of Governance receded into the background.

The work of the Commission on employment was fully accepted by the Government of India in 1992, though it could be implemented only a decade later. In the international economic life, it was a great forward step. It is a rich reward that a high level executive of the ILO could see the same significance in it. Recently the Secretary General of the Club of Rome declared that the global challenge of Employment is of even greater urgency than climate change. European Commission President José Manuel Barroso observed that the solution to unemployment rests with economics of a wider base. It is our view that a human-centred economics will wipe out unemployment and the financial crisis will vanish into thin air. A greater significance for human existence on earth lies in the theme of Governance becoming a concept of clarity. It will be a Seed-Idea that is self-effectuating.

The launching of ICPF was from an inner perception of the conscious and sub-conscious panic generated in the world's population by the confrontation between the

nuclear superpowers in the 1980s. Our Theory, being comprehensive, told us that such an all-consuming passionate urge of the population will instantaneously fulfill itself. Still, it required a token formal organisational effort. Hence the formation of the Commission. The political response of a dramatic reduction in the number of nuclear warheads came a week before the first sitting of the Commission at Trieste.

While we were exercised by the theme of Governance, our theoretical perception was that the initiative must come from outside. It did come in December 2009 from an elderly European statesman as a ‘crazy’ idea. Our hope that it was an evolutionary idea – Seed-Idea – was abundantly confirmed by subsequent developments in economics and employment. A member of the Club of Rome has had occasion to comment on Money in a fashion that it could lead to a solution for the financial crisis. Our Theory emphatically lays down that it takes a very long time for the right perspective to be born, but once it is there, the solution for a longstanding knotty problem is soon achieved. Thus we see the importance of the concept of Governance.

The distance between a possibility and an actuality is very great in the affairs of human existence. In such circumstances, the Theory takes the position that Man—sincere determined Man, based on sincerity, supported by some similar forces—can hasten the result. The method advocated by the Theory is to evolve a concept of Governance that carries the strength and density of mental clarity.

Facts, thoughts, ideas, self-effectuating ideas which we call Seed-Ideas are sensational, mental, practical representations of the philosophic idea of Real-Idea, an idea that can readily accomplish itself. Facts are observed by our various senses. Mind coordinates two or more facts to generate a thought. Thus, a thought is a mental essence of physical observation. It is achieved by the faculty of thinking. Mind has over a dozen such faculties. Still the mind is more than its faculties or the sum of its faculties, to speak in Aristotelian terms. Ideas are the quintessence of thoughts achieved by the entire Mind in its exercise of wholeness of existence – sub-conscious and conscious. Such ideas have two parts – knowledge and will. One comprehends and the other executes. By a higher process made possible by life experience and more so by inner mental experience, the knowledge and will begin to blend and fuse, each accepting the role of the other in a greater measure. In that measure, mind becomes more effective, moving towards self-effectivity. Should the entire thought fully fuse with the will, the simple idea matures into a powerful Seed-Idea capable of initiating action.

Sincerity is the emotion of the deepest aspect of man. One may call it the emotion of the soul, if one is religious or philosophical. Sincerity is the emotional sensation of the whole embodied being. It never fails, knows no failure, cannot fail. An individual is more easily capable of arriving at his own sincerity than an organisation of many individuals. An organisation of such individuals, irrespective of the number, will have sincerity at the organisational level. Such an organisation accepting a Seed-Idea of Governance will be able to found a world government. Our great hope is when the idea evolves into a Seed-Idea, it is possible to evoke a response from men of sincerity for this goal. Of the many requirements of a Seed-Idea, I have been emphasising the value of its clarity. Clarity is the power of truth, a status that admits of no conflicts. Conflicts arise out of irrational bases. Harmony and consequent clarity result from rational premises. Such premises arise out of the historical

progress of an idea. It gets fortified by the historical evolution of beliefs, organisations, technologies, social attitudes, localised ideals, bases of human personality, etc.

Government is a vital institution of power. Governance is a mental theoretical concept of evolving ideas. Our strategy is to create what we can, an Idea, and see whether the practical goal we have in mind can be accomplished from there. This article does not hope to be elaborate by entering into a detailed consideration of every facet of the concept. Its hope is to be indicative, not exhaustive. Since the idea of world government was effectively mooted after World War I and was precipitated as an organisation – the United Nations – after World War II, and the Mind of Humanity is far more mature now for this purpose, it is possible to accomplish this aim. For instance, the veto power which made the UN possible in 1945 in the then prevailing political tension has lost its rationale since the demise of the Cold War. Pressure of public opinion must be able to abolish the veto power of the Big Five and render the UN democratic. There is more than one world issue on which a UN initiative can achieve unanimity or a near absolute majority. Such organisational initiatives are of value. The thrust of Cadmus to fashion a comprehensive Seed-Idea will go a long way in that direction.

Great ideas have ruled the world. The greater ideas have sometimes initiated revolutions. Of them, the greatest idea was human freedom. In the earlier centuries, Europe was the world, at least to those who mattered in the world. In the severely structured society of Europe, the birth of freedom as a live concept of every man was unthinkable. But the progress of humanity needed freedom imperatively. The birth of America, the land of freedom in every sense, answered that aspiration. Man was utterly free in every sense of the word. His freedom was accompanied by an equal loneliness of existence. He could seek no help, as no one was around. He did accomplish abundantly in these conditions. His individual success was also economic success. It made possible his political emergence as an individual. Individuality is an especial possession of the Westerner. In Europe, it is mental individuality. In America the bias of individuality is towards material plenty. America realised the higher truth of civilisation that its essential bases are material prosperity and individual freedom. Today she is the evolutionary spearhead of global civilisation. For the same reason, fundamentalism is more pronounced there and international terrorism has made her the target of attack.

It was in 1862 that America took the extraordinary step of unifying her states, exhibiting a political acumen that was conspicuously absent in Europe. Only after the Second World War, Europe awoke to that reality and gave serious thought to the formation of the European Union. It is a historically significant fact that as the thought of unifying Europe gained momentum, as a parallel the USSR developed ideas of freedom of various descriptions. USSR dissolved when the EU became substantial. It is not always the founder of an idea or even a company who remains the leader throughout. Often a follower takes over. Democracy was born in England and it flourishes in the USA. Buddhism was born in India but does not survive there as it does in China and Japan. Science was born in Europe but it rules the world as technology nurtured in America. Because of a deeply developed cultural basis, Europe has the possibility of being the world political leader at least in thought. If that surmise is correct, initiative of thought about employment, economics, and governance coming from Europe carries credibility.

America has no positive leadership to offer the world in this regard. Her inability to solve the financial crisis, indifference to rising unemployment, and her attraction to monetary

economics help her eminently to miss the political leadership she has been enjoying. As no longer an individual is going to be a leader, so also no nation is going to play that role. That role belongs to evolutionarily advanced ideas hereafter. Clarity of thought, especially when it becomes an idea where thought and will fuse, has a very great power of effectivity. The French language has grown in eminence, has been known to have intellectual precision. No wonder it spread all over Europe even into Russia. A mother in a Russian novel chastises her child for speaking in Russian and tells her to speak in French. Intellectual clarity carries within it the power to spread.

The philosophic theme of this article is that the whole cures any deficiency of the part. Politics is the whole of which economics is a part, and employment is a small part of the wider domain of economic life. Ushering in a global government generates the power of solving these minor problems. Government is the context that activates the politician. Politicians can cure the ills created by economists. A wider vision of economics solves the problems created by narrow inspiration.

I am heartened by a further prospect that comes into view by this conception. Man's perception of good or evil is determined by the level of development he is in. There was a time when thunder was considered evil and dreaded. Since then electricity has been studied and harnessed to serve man with minimum harm and maximum benefit. Electricity is followed by electronics. There is no evil in society except that which appears as a result of man's inability to handle the forces he unleashes. In this context, nuclear energy assumes significance. As man grows to be fully master of himself, the effectivity of evil lessens or is even transformed into good. Nuclear energy is the most powerful energy man has so far come by but, as it is, it is not as fully under his control as other forces, such as electricity. It is right that man only unleashes those forces that can serve him. To unleash a greater force, he must wait until he acquires the capacity to control it fully. Every force that was a hindrance at some time in the past became a help later. This can be understood as man's mastery of these forces. It can be better understood as man's self-mastery, a capacity to be unegoistic, unselfish. Nuclear energy stands the chance of serving humanity vastly in future when we have made the necessary psychological progress. Until then we must have the wisdom and patience to wait.

Nature has a way of presenting the greatest good as the greatest evil. Human progress can be measured in terms of knowledge, mastery over Nature, technology, organisation, authority, power, wealth, convenience or comfort. It can also be comprehended by his choice of good against evil, self-discipline to be utterly human— an innate propensity to be only good to others and reject opportunities to harm another life. Such an attitude removes the basis of suffering caused by unemployment. It is a moral or ethical attitude, which arises first as a functional attitude in society. If not now, in the immediate future, it is possible for man to acquire the capacity for self-denial. When this progress results in a technological advance that makes nuclear energy completely safe, we usher ourselves into a great future.

Every war clears the obstacles to progress. It is an idea known from the days of Heraclitus, seen to be true in 1950, confirmed in the declaration of the UNDP that the world progressed more after 1950 than during the previous five centuries. At the time of discovery of the atom bomb, there was such confidence between the super powers that leading scientists advocated

US-Russian collaboration on the project. Peace was more in the atmosphere at the founding of the UN than tension and suspicion. It was a great opportunity to found a world government that was missed. A similar greater opportunity arose at the demise of the Cold War. Again it was a misfortune that the world failed to move towards human unity and a global effort to govern. Nature does not miss similarly. Those energies have gone to create the Internet which is systematically demolishing secrecy, individual ego, selfishness, etc.

Those were positive opportunities. Financial crisis, nuclear arms, climate deterioration, unemployment and terrorism are negative opportunities for sincere men to act. International NGOs have grown in number and importance. That constitutes the psychological basis for the organisation of global governance.

Three years ago our Society was represented at a conference on nuclear disarmament organised by an international NGO in Ottawa and chaired by a leading Canadian politician who worked for twenty years for the abolition of nuclear weapons. The conference delegates were so discouraged by the apparent failure and hopelessness of all efforts to eliminate these weapons that in frustration the chairman expressed willingness to wind up the organization. Our member who met him expressed the very opposite opinion of optimism. It was a period when no presidential candidate in the USA would speak of nuclear weapons. Shortly thereafter, the atmosphere changed. A chain of events was set in motion that culminated in an article in the New York Times by four former US Secretaries of State and Defense sounding a different note. All the democratic candidates for president in the 2008 elections came out in favor of nuclear disarmament. The Indian Prime Minister officially reconfirmed his country's commitment to the same goal, contrary to the expectations of senior members of the nuclear movement. President Obama made a similar pronouncement at the UN. Now that frustrated Canadian politician has become a nominated candidate for the Nobel Peace Prize. What leading politicians can do, it is my opinion, men of sincerity too can do.

The key lies with the politician, rather in politics. The move to abolish unemployment is not an economic issue, it is an issue of political significance. It strives to impart political content to democracy by ensuring political equality. Political equality has no reality without the basis of economic equality. Guaranteed employment is only the minimum; it is not full economic equality. Going further down, it is social equality of women, castes, and classes that make economic equality real. Equality before law has no substance if personal liberty is not adequately protected by the speedy redressal of grievances voiced by the affected citizens. It is the sacredness of liberty honoured that makes equality real and substantial.

To permit greed, selfishness, inequality, and egoistic attitudes in society by allowing the unregulated market to rule the roost is to be as blind as the French aristocracy in 1789. Political equality initiated by democracy, equality in economic opportunities ensured by regulated market, ready and unhesitating abolition of nuclear programmes of all descriptions are the need of the Hour. Blind men will be swept aside by the revolution of rising expectations brewing under the surface.

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Revolution in Human Affairs: The Root of Societal Violence

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At the time of writing, there is an obvious and tragic upheaval in the Arab world and a large number of other developing nations. North Africa from Mauritania to the Suez Canal and Yemen, the Persian Gulf from Iraq to Bahrain and Oman, and Afghanistan are on fire, much of it fuelled by religious ideologies, but also supported by Great Power politics. This upheaval comes on the heels of a four-decade old, asymmetric war through irregular fighting and terrorism, with the Islamists' non-military side having been encouraged to fight in the name of religion with a role reversal of most of the participants (except Pakistan). Afghanistan-Pakistan (Af-Pak) may or may not be anything else, but it certainly has been the epicentre of global terrorism and narcotics growth and trade for four decades. Many optimistic experts believe that the war and conflict in Iraq are over. Others conclude that oil is the main prize in this widespread upheaval, especially since it seems to be on its way to decline by mid-21st century. But that should not blind us to the underlying causes of instability in large parts of the world, which like a smouldering volcano are liable to erupt any time.

Let me state at the beginning my conclusion that this upheaval and violence have been triggered by what could be termed as the "Revolution in Human Affairs".

War and conflict have defined the contours of history of the human race. Revolutions, domestic violence, terrorism, crime and societal turbulence are some of their expressions. Many of the factors that have been responsible for such violence are also common to both interstate and intrastate wars and armed conflict. But national revolutions which have taken on different forms, whatever the reasons, are rooted in a set of factors that can be identified reasonably clearly and have a great deal of commonality among them, even if these revolutions have been separated by space and time spread over centuries.

A large number of global issues and mega trends are beginning to impinge on national/international security and human consciousness; and many have an impact down to the level of the individual. Regular wars between states, as we have known them for many centuries, now appear less likely to occur. But in the process of their winding down, they unleashed terrorism and armed violence with sophisticated weapons where the risk of nuclear weapons/materials leaking to jihadi warriors is high on the list of international concerns. The new "wars" often termed as "4th Generation" or asymmetric warfare include a variety of types of armed conflict, including insurgencies and counter-insurgencies, trans-national terrorism and other forms of armed conflict within states, though often triggered and aggravated by external factors and actors. Wars and armed conflict of the future, therefore, are likely to involve the use of military force, but not necessarily in direct contact. Threats and challenges to security

are increasingly non-military, though most remain military-related. Crime, corruption, and murder have become endemic, especially in the emerging economies. Global problems will require global cooperation for their solutions. Otherwise, some states may be able to solve some of the problems, especially from their own point of view. But this would inevitably trigger new issues and disputes. Global threats, unfortunately, do not command immediate attention or a wide consensus on the need to meet the challenges. But it is important to understand the root causes of terrorism and other forms of violence in order to initiate corrective measures.

The New Revolution

The greatest global challenge that faces the international community today is that of the current trans-national **revolution in human affairs**, which in turn is triggered by the combination of three revolutions:

1. A revolution of rising expectations,
2. The information and communications revolution
3. A broader industrial-technological revolution.

Harlan Cleveland was the first person to identify the “Revolution of Rising Expectations” while administering relief and development aid in East Asia in the early 1950s – an awakening of the population of former colonised nations, releasing immense expectations of a new life after independence based on liberty, equality and fraternity. Expectations of people rose rapidly, in large part because of the rhetoric of independence and the sense of freedom that would create a new life for every one. But the realities did not change as rapidly as the political map of the world. The horrors of the Second World War, with the atomic bombing of Japan, also led to a wave of decolonisation. But most decolonising countries ended up with either violent revolutionary insurgencies (like Malay, Vietnam, Algeria, Indonesia, and even China) or the post-independence new rulers, in many cases, military men who acquired power on the basis of their control over the instruments of violence which had become ever more lethal and triggered numerous ethno-sectarian conflicts. The gap between the aspiration of the people and the reality of existence (which would take decades to change) created an intrinsic instability in the developing countries. India was fortunate, though it had its share of ethnic cleansing and communal riots which overshadowed the non-violent struggle for independence.

Poverty alone does not necessarily lead to societal violence and revolutions. This is particularly so in the earlier history of nations when communication of information and knowledge was slow and limited in space and time. The trigger for revolutions (and its lesser manifestation as social turbulence and armed violence) rests in the rise of *awareness of the gap between expectations and reality* in life. This had happened earlier during the Industrial Revolution in the 17th and 18th centuries when the normal means of economic productivity shifted from human labour to machine-based production. In turn this led to demographic shifts toward the sources of energy (initially coal), raw materials and markets. The Industrial Revolution first started in the 17th century on the basis of steam driven machines in Britain. This also saw a rapid growth of urbanisation to facilitate the utilisation of new means of production. Living conditions deteriorated and crime, social turbulence and violence increased.

The Industrial Revolution gradually expanded across the Channel into Western Europe during the 18th century. This resulted in nearly endless rebellions and revolts throughout the century till finally the French Revolution provided the major demonstration of the revolution in human affairs, **having its roots** in the inequities and disparities in social, economic and political domains, and the awareness among people of this phenomenon. Inevitably **this awareness led to growth of a sense of relative deprivation among the deprived segments of society; and this most affected youth.** The deprived also became vulnerable to exploitation by ideologues, disgruntled elites, and even the affluent, as can be seen from the history of French Revolution where the aristocracy first supported the uprisings against the royalty, only to be swept aside by the anger of the mobs when things did not improve perceptibly. Here the question must be asked: why did Britain not witness a major revolution in the process of rearrangement of social, economic and political life? One answer is the movement of increasing numbers of British citizens, rich and poor, to other lands to be employed in trade, military service in its “small wars” across the globe, and associated professions, which resulted in the extensive British Empire (on which, it was said, that the Sun never set).

Other European countries followed suit and started the migration and colonisation of Asia, Africa, North America and Latin America with twin results: the growing affluence of metropolitan powers and the decline in the socio-economic conditions of populations in the imperial colonies. Only Russia was deficient of maritime power to sail out and occupy the territories and resources of what became the developing world. Hence it set about expanding its territories on the Eurasian continent till it came up against the British Empire to its south. On the other hand, the Russo-Japanese War of 1904-05 broke the myth of the superiority of the European races. It also denied Russia a foothold in the maritime domain on the strength of which it could further expand, although small countries such as Belgium, Denmark and Holland managed to establish colonial rule over territories in Asia and Africa and control their resources, both material and human. Similarly, Spain and Italy expanded to control Latin America, as did Portugal after it failed to get a foothold beyond the small enclave at Goa in India, and Macao in China.

Colonisation by the metropolitan powers of Europe to control the human and material resources of the other continents on the strength of their technological superiority derived from the Industrial Revolution also led to the progressive de-industrialisation of many of the countries which till the beginning of the 18th century had dominated the global manufacturing output and income. China accounted for nearly 33% of global manufacturing output and India, nearly 25% at the beginning of the 18th century. By 1950 both countries combined accounted for a mere 1.3% of the global manufacturing output and income. This impoverishment also implied that they became essentially raw material suppliers, while importing value-added goods from European industries. It was only around the time of the Second World War that industrialisation began in China and India, while most of the other colonies became home to plantations and mining with native labour under European control and ownership.

Decolonisation naturally started the industrialisation of countries such as India. Like the European countries in earlier periods of industrialisation, urbanisation, social imbalance, crime and violence also spread. It is in this milieu that the information-communication revolution impacted on the developing countries. Expectations started to shoot up, especially in the generation after independence when pessimism arising from slower than anticipated progress

began to increase. But while India was not fortunate enough to escape the revolution of rising expectations completely, it was moderated by the adoption of democracy and secularism based on the idea and principle of “equality of the human being” which constitutionally narrowed the gap between the haves and have-nots and allowed people’s aspirations to be met through legitimate political and socio-economic processes. Countries such as Pakistan, which ignored the longer term processes affecting human affairs and hung on to medieval style feudal societies, suffered increasing poverty and the rule of the gun.

The revolution in rising expectations, especially when coupled with a growing consciousness of inequities and disparities in social and economic fields as a consequence of an industrial revolution, has been the most common cause of revolutions. The modern information and communication revolution has promoted global awareness of these revolutions, enhancing the sense of relative deprivation resulting from consciousness of disparities and inequities. The increasing gap between rapidly rising aspirations and glacially slow change in social realities has often been exploited by those with a lust for power and by ideological extremism willing to use terror as a tool for political and foreign policy goals.

For the first time in history these three revolutions have converged in space and time to generate a Revolution in Human Affairs. Violence and armed conflict in the Arab world today is due in no small measure to the impact of this Revolution, aggravated by the increasing gap between the affluent and the deprived. The future international order, peace, and security will substantively depend on the progress of this Revolution and the way the international community, states, and societies respond to it. If we look at major departure points in intra-state balance of power and societal equations, we find that the present Revolution, in fact, is the fifth such revolution related to the structures of society and state in modern world dominated by western civilisation.

The *first* revolution, of which the Thirty Years War was the manifestation and which finally came to an end at the Peace of Westphalia (1648 AD), was triggered by the Industrial Revolution and the revolts and rebellions it spawned among European communities and principalities. The struggle between the aristocracy and the clergy was only a part of the larger struggle for power, which was finally resolved by the separation of the State and Church (in the Occidental Civilisation). But if we look closely, it was the beginning of the Industrial Revolution that created conditions of imbalance in society, the awareness of which led to a series of revolts, rebellions and revolutions. The *second* revolution, manifested in the French Revolution, resulted from the socio-economic mobility (as a result of the fruits of the Industrial Revolution) seeking to alter the intra-state and societal balance of power. Upwardly mobile segments of society – the merchants, industrialists, capitalists – the bourgeoisie, sought a greater role in the distribution of power and status, while the poorer classes sought a better quality of life and some say in the process of achieving it. While the first revolution altered the basis of the state, the second sought to alter the basis of state as well as society. The *third* revolution manifested in the shape of a violent implosion following the halting of imperial expansion and resulted in the totality of the First World War. This revolution pitted the proletariat against the bourgeoisie in a struggle to bring about distributive justice in the socio-economic field. The *fourth*, the revolution of decolonisation, sought political equality in a struggle between the colonised and the imperial metropolitan powers. The Second World War gave this struggle a great boost, because the war itself altered the power equations of the

dominant international order.

All these four revolutions were identifiable struggles and closely connected with the restructuring of state power and the international political architecture in association with violent upheavals and major, general wars involving all significant actors. The alteration of the *inter-state* balance of power after the Peace of Westphalia, Congress of Vienna, Paris Conference and Yalta meeting was also contemporaneous with the *intra-state* balance of politico-economic power.

For more than a quarter century, the world has been in the middle of a *fifth* revolution. This is the revolution of information-communication, which has been super-imposed on the historical revolution of rising expectations and upward socio-economic mobility. Countries like China have kept the information-communication revolution on a tight leash; in fact, even using it for its own ideological goals to shape the perception of expectations and realities. But liberal democracies such as India can hardly adopt repressive control of that type. Like the earlier revolutions, its manifestation also happened to coincide with the culmination of a great international conflict – the Cold War. In fact the revolution received a marked boost as the Cold War ended. Not the least amongst the reasons was the expectation of global “peace dividends” and a sense of release and freedom from existing tensions and confrontations.

Human expectations inevitably keep growing with human progress. In fact, a fairly high degree of divergence between expectations and actuality is necessary to provide the driving force for human endeavour and progress. The rate of growth not only defines productivity; the gap in the rates of growth has a powerful influence on human responses. But if expectations start rising at a rate far exceeding the rate at which achievement and satisfaction of those expectations rise, social turbulence starts to increase. Any further increase in the expectations-actuality gap would correspondingly increase instability in the socio-political order, having a deleterious effect on the economic activities. At some point (different for different regions and people) a pattern of dynamic instability is created, resulting in socio-political upheaval.

It may be hypothesised that the rate of growth of expectations can be repressed through tight control over information flows on one side and an ideological rationalisation on the other. This was the case for the Soviet Union under Stalin and Brezhnev. However, as public information flows increased under Gorbachev’s reforms, awareness levels increased rapidly as well. Expectations shot up almost in an exponential growth pattern during the late 1980s. The actuality inevitably lagged behind. It was this phenomenon that Mikhail Gorbachev tried to manage through a harmonisation of ideology and policy to keep the expectations-actuality gap within manageable limits. It is also this rapidly increasing gap that resulted in the continuing politico-economic and social crises and turbulence that has far outlived the Soviet Union and the Communist party.

The opening up of the flow of public information depicting differences in the quality of life in developed and advanced countries in an age of information-communication revolution through electronic media (long held under tight controls) rapidly altered expectations of Russians. Suddenly young girls were out in blue jeans dancing to Western tunes on the thick carpets (in the absence of dancing floors) that were the hallmark of Soviet Moscow’s best hotels! McDonalds opened very soon and a different looking young Russians happily

stood in miles-long winding queues; not long before housewives stood for traditional food and were now sitting on the pavement trying to sell items from home to earn more money. Salaried people in the best of government offices and even in the military were not even getting paid by 1992. Hence, in spite of the fact that Soviet economy had been growing under Gorbachev, the dissatisfaction levels among the Russians led to serious socio-economic turbulence which only benefited the rapidly increasing mafia and their lawlessness. Similarly Yugoslavia started to disintegrate along with massive violence.

Interestingly, it was China that learnt the lessons by controlling information and guiding the perceptions of its people, while the Communist Party worked out the plans for change. It kept a lid on the information being fed to the people, while it continued its economic reforms to build a market economy with “Chinese characteristics”. The meagre liberalisation of the early 1980s was quickly snuffed out at Tiananmen Square with battle tanks in 1989. It is under such stratagem that China managed its double-digit growth and phenomenal rise for more than two decades, while maintaining politically authoritarian governance.

In essence, this is a global phenomenon and challenge. It is not a problem that can be addressed at the national level alone. Globalisation of trade and information flows, especially through satellite communication systems, has not only shrunk the globe, but has also rapidly raised the awareness and aspirations of people. There are structural and situational limits to the rate of growth of achievements, especially in the developing world. And the real problem may be that we have yet to achieve adequate consciousness of the ongoing revolution. So far, attention has been focused essentially on the effects of this revolution rather than its true dimensions. But increasing ethno-nationalism, religious-political radicalism, erosion of state control over economic, social, and even political- administrative activities of a modern state (Cambodia, Somalia and Afghanistan stand out as stark examples), corruption, societal violence and conflicts, erection of trade and tariff barriers and other forms of protectionism and cartel building are only symptoms of the real problem.

Given the issues briefly outlined above, the question arises as to how we should manage the Revolution in Human Affairs so that it can be vectored in a positive direction for greater constructive, productive and peaceful outcomes.

To begin with, we hope more and more countries would adopt democratic principles and practice, which can help to moderate the turbulence by the promise of social justice and progress towards more equal opportunities in life, regardless of the socio-economic condition of people at birth. But we know that the world is already facing societal unrest, violence and terrorism, often based on religious extremism and intolerance, and hence more urgent steps are required. One method would be to follow the Chinese model and try to limit the information available to the people. But this goes contrary to the principle just outlined: that of equality of the human being and freedom of expression and faith, the last becoming critical in a developing country where changes in the pattern of family, society and dynamics of work and employment are leading to greater urbanisation and more critically, to the emergence of nuclear families.

Most significant is the fact that over 95 percent of the terrorists in the world today are estimated to be in the age-bracket 15-30 years. This is the age-bracket that is crucial for education and higher learning and entry into job market. This is also the age when man

has his largest dreams and hopes for a better life on earth. There is also a certain pervasive innocence, if not naivety, that shapes the views and actions of youth in this bracket. On the other hand, lack of development also implies fewer jobs, especially for the partially-educated and school drop-outs, who constitute the vast majority of even the Islamic madrassas. If we take the short history of Kasab, one of the Pakistani terrorists involved in the 26/11 carnage in Mumbai,* choices are limited for youth in a country where the rate of population growth is higher than the rate of growth of GDP, absolute poverty is increasing, school drop-out rates have been rising due to pressure to find work in order to survive. The choice is clear in such cases – **either jobs or jihad.**

One strategy that is essential to tackle the Revolution in Human Affairs is to focus on youth, since the energy that can be released for positive outcomes would be the greatest by redirecting youth into higher education and gainful productive employment with future career opportunities. The realists may tend to dismiss this as too utopian. But the alternative is already with us to see and suffer from. This will not be an easy task. For example, India will add over 103 million people to its population during the coming decade, which means it must create an average of 10 million new jobs each year, in addition to the numbers needed to absorb the backlog of unemployed and underemployed.

In this context we need to view the socio-economic disparities and inequities in different regions, such as the areas affected by Naxalism and Maoist violence in India or Balochistan in Pakistan. The demographic trends point toward reduction of working populations in most of the developed countries, with an increase of the elderly population that needs to be supported by societies with fewer working people. There is also the counter phenomenon of high growth rate of population in many Islamic countries such as Pakistan and Bangladesh, combined with very slow economic growth and minimal growth in employment opportunities. But in either case, the solution lies in a massive effort to enhance education and gainful employment, especially of the girl child (a vast challenge in itself, but one which can change socio-cultural dynamics rapidly). Whether this is done in a school, in a Mosque or in air-conditioned class rooms is really immaterial. What is needed is a process that gives the youth a new hope and direction than what Kasab and his ilk have received so far. An accompanying phenomenon important for success is the redirection (not control) of public information and the media to constructively enhance the life and hopes of the people.

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* Reported in Time Magazine, 16th March 2010

Universal Nuclear Disarmament: What Can India Offer?*

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1. Introduction

Universal nuclear disarmament[†] is not a new concept. From the time that the weapon was first used in 1945, and once the horrendous destruction that it could cause was understood, countries have struggled with the challenge of how to put the genie back into the bottle. To little avail. Nuclear abolition has proved to be an elusive objective owing to the lack of sufficient political will to actually undertake the exercise. In fact, the politics of the possession of nuclear weapons and questions over the very desirability of eliminating nuclear weapons have always overshadowed all other considerations. Arguments against a nuclear weapons free world have often hidden behind the assumptions of unfeasibility of nuclear abolition owing to the complications involved in the logistics of handling dismantlement and destruction of already built up stockpiles of nuclear warheads and the safe storage of recovered fissile material. Meanwhile, horizontal and vertical proliferation have continued, thereby making the attainment of universal nuclear disarmament more and more difficult and complicated.

During the Cold War, the number of weapons between the two Superpowers touched an all time high of 70,000. These could have destroyed the world several times over and still left the radioactive rubble bouncing. After the fall of the Berlin Wall, the numbers of nuclear warheads fell substantially. In fact, over the years since then, as USA and Russia have rationalized their nuclear arsenals in keeping with the changed threat perceptions, the numbers have progressively come down. So, the US and Russian arsenals can today boast of nuclear stockpiles in the vicinity of a meager 10,000 each, while the total global nuclear stockpile stands at about 22,500. This, of course, is still plenty to destroy the world, if not as many times over as in the past!

These reduced numbers, however, are not an indication of a reduced importance of nuclear weapons. For countries that possess these weapons, not only are they considered an essential element of their national security strategies, but they are also deeply entangled with concepts of sovereignty and prestige. In fact, three major motivations can be easily identified as being the prime movers behind national nuclear weapon programmes – a sense of security or insurance against coercion or blackmail, the independence to exercise national policies without outside interference, and the prestige they bestow. These factors combine to weave a complex web that holds nuclear weapons firmly in place in national arsenals.

* This paper was originally written for the Global Consortium for Security Transformation.

† The terms nuclear disarmament, nuclear abolition and elimination are used interchangeably in the paper to mean a world free of all nuclear weapons.

As a result of the above, any attempts at dealing with the ideas and issues related to elimination of nuclear weapons necessarily require going deeper into the reasons for their possession and justifications for their sustenance. This is important because, though at one level, it appears that universal nuclear disarmament can come about fairly quickly if the requisite political will in the nations that matter can be generated, yet the challenge that lies in creating the atmospherics that can help that 'political will' to emerge and be expressed demands that due consideration be granted to the motivations for nuclear weapons in the first place. In fact, this is where the bottleneck lies and the history of failed attempts at nuclear abolition proves that the reasons for elimination of nuclear weapons have never been able to outweigh those that have made countries acquire or hold on to them.

This situation could possibly change in three circumstances:

One, if there was an accumulation of enough risks from the continued possession of nuclear weapons. As dangers surmount and begin to make nuclear weapons more a liability for security than an asset providing security, nations could find greater prudence in their elimination than in their retention. Contemporary nuclear threats that preoccupy nations are of a character and dimension that could make them more a problem than an advantage for the major players in the nuclear game. And, this could turn out to be a game-changing moment, as is elaborated below in section 1 of the paper.

Two, if enough public pressure is mounted on governments to make politically binding commitments towards nuclear abolition. Some of this existed during the period of the Cold War when non-governmental organizations and civic campaigns kept the focus on the dangers of a nuclear exchange. However, they dissipated once the threat of a nuclear holocaust as a result of a nuclear exchange between the US and USSR vanished. Today the civil society does not advocate the cause of disarmament with any major sense of urgency, though several organizations in more recent times, especially in the run up to the NPT Review Conference in 2010 have pushed the case. For instance, Global Zero – an initiative headed by Bruce Blair, a former US official once in charge of command and control, the International Commission for Nuclear Non-proliferation and Disarmament (ICNND) instituted by Australia and Japan, the Middle Powers Initiative, etc. pressed for steps towards nuclear abolition in 2009-2010. The initiatives, however, have remained individual attempts instead of snowballing into a movement with global dimensions and appeal.

Thirdly, if as a result of the above two factors, the political leadership in major nuclear armed nations feels the need to change the status quo. For instance, it is for the first time that the President of a nation that possesses one of the largest nuclear arsenals – the United States – has publicly supported the goal of a world rid of nuclear weapons. President Obama has even received the Nobel Peace Prize in good faith for his personal endorsement of this aspiration. More like-minded leaders are needed to join hands with him, and the US, to create a critical mass that could generate enough momentum to turn the hope into reality.

Keeping the above three factors in view, this paper specifically dwells on the Indian understanding of and initiatives towards universal nuclear disarmament. It argues that for a country like India which has long been a steady champion of nuclear disarmament, and which perceives that its national security is best served in a nuclear weapons free world, this is an opportune moment for taking a proactive stance for nudging the international community

towards nuclear abolition.

It is a fact that over the last decade or so, India has been relatively quiet on disarmament as compared to the more active role it has played in the past. This may largely be attributed to the introduction of a greater strain of realism in its foreign policy owing to the nature of its threat perceptions. The use of nuclear weapons by Pakistan as a shield from behind which to foment proxy war on India through a constant influx of terrorists into Indian territory, and the close nuclear and missile nexus between China and Pakistan have compelled India to focus attention on building credible nuclear deterrence against its neighbors. Meanwhile, the inability of the non-nuclear weapon states (NNWS) members of the NPT to use their leverage to push the nuclear weapon states (NWS) towards honoring their commitment to Article VI of the NPT that dwells on nuclear disarmament has caused major disillusionment to India. As a consequence of the realization that the non-proliferation regime would be unable to redress its security challenges, India's recent approach to nuclear abolition has been laced with more cynicism.

However, the major thrust of this paper is to highlight, both for the Indian establishment and public as well as for the international community, the role that India could and should play in facilitating the realization of a nuclear weapons free world. The country has a unique perspective on the issue. Unlike the case in any other nuclear-armed state, India's nuclear doctrine, which is meant to operationalize the nuclear strategy, begins and ends with reiterating the country's desire for nuclear disarmament. Para 8.1 of the doctrine, in the section on Disarmament and Arms Control, reads "Global verifiable and non-discriminatory nuclear disarmament is a national security objective. India shall continue its efforts to achieve the goal of a nuclear weapons-free world at an early date."* The doctrine itself is premised on several concepts whose acceptance could ease the journey towards elimination of nuclear weapons. What are these? And, what could be India's specific contribution in this regard? These are some of the questions that this paper attempts to answer.

For the sake of convenience and coherence, the paper is divided into three broad sections. The first of these addresses the nature of contemporary nuclear threats that make it imperative for the countries possessing nuclear weapons to seriously consider the dangers that humanity faces from the continued existence of nuclear weapons in national arsenals. Section 2 explains India's understanding and interpretation of universal nuclear disarmament, and the last section makes some recommendations as derived from India's nuclear doctrine to facilitate movement towards a nuclear weapons free world.

2. Nature of Contemporary Nuclear Threats

It may be recalled that the years following the Cold War were marked by a number of developments that suggested the possibility of a 'partnership' between the once ideologically estranged superpowers. Both, the US and Russia, unilaterally and bilaterally announced cutbacks in their nuclear arsenals. There were successive initiatives at the UN as also at the Review and Extension Conference of the NPT in 1995 to refocus attention on elimination of nuclear weapons. The Canberra Commission was instituted for the purpose of drawing a roadmap towards nuclear disarmament and it submitted its report in 1996. The World Court

* Full text of the Indian nuclear doctrine is available at Ministry of External Affairs, Government of India website.

rendered its advisory opinion on the use of nuclear weapons in the same year. The Lawyers Committee on Nuclear Policy drafted a Model Nuclear Weapons Convention in 1997. Several multi-national groupings such as the Middle Powers Initiative and New Agenda Coalition, as also a number of non-governmental organizations, lent their weight and voice to moves towards universal nuclear disarmament.

However, as has been opined rather graphically, “the tide never could turn into a tsunami that could have washed away national nuclear arsenals”.¹ Rather, as the sense of an imminent nuclear holocaust dissipated with the end of the ideological rivalry between the US and the USSR, it also took away with it the urgency and focus on nuclear disarmament. Active civil society and non-governmental movements pushing for universal disarmament became complacent and quiet as the threat of a possible nuclear exchange resulting in mutual assured destruction (MAD) reduced. Meanwhile, the period 1998-2007 was marked by horizontal proliferation. India and Pakistan in 1998 and North Korea in 2006 demonstrated their nuclear capability. Meanwhile, Iran emerged as a troublesome NPT member with an alleged nuclear weapons programme. The ambiguity on its nuclear capability and intentions still persists. The dangers arising from more nuclear weapon states, however, have not caught the imagination of public movements in the same way as the threat of nuclear Armageddon between the US and USSR had. Consequently, the public campaigns for nuclear disarmament are less vociferous.

At the same time, a distinct development of recent times is the realization on the part of decision makers of the rise in two types of dangers from an increase in the number of states having nuclear weapons. These dangers include increased existential risks of unauthorized, accidental or miscalculated use of nuclear weapons; and the heightened possibility of inadequate controls over the weapons and their infrastructure leading to nuclear terrorism. These developments have brought a consciousness, especially in the USA which is normally the trendsetter on nuclear issues, that the American nuclear arsenal may no longer be an advantage for national security, but could well become a problem by encouraging proliferation of a new and more dangerous variety. Several watchers of nuclear developments in and outside governments have commented upon the novel dimensions of the contemporary nuclear threats. For instance, some of this thinking was powerfully reflected in two articles by four American Cold War nuclear practitioners^{2,3} (popular today as the Four Horsemen) published in the Wall Street Journal on 04 January 2007 and 15 January 2008. Both pieces highlighted how the “accelerating spread of nuclear weapons, nuclear know-how and nuclear material has brought us to a nuclear tipping point”. And, this started the ball of disarmament rolling once again. The debate gathered a fair amount of momentum and new initiatives were offered from many capitals. A speech by President Barack Obama in Prague in early April 2009 added the weight of yet another powerful voice to the issue.

However, there was a distinct feeling, at least in India, that all of this was being done with one eye at the Review Conference of the NPT in May 2010. Given the state of nuclear relations between the nuclear weapon and non-nuclear weapon states, it was assumed that unless the NWS showcased initiatives towards keeping their end of the bargain on movement towards nuclear disarmament, the NNWS would be disillusioned with the treaty itself and could lose faith and commitment to it. As an attempt to retain the NPT as a viable non-proliferation tool, the focus on nuclear disarmament peaked in the run-up to the RevCon.

As it turned out, the RevCon managed to keep the treaty intact and unlike the case at the last RevCon in 2005, it even managed to conclude with a consensual Final Document that included a separate section on Conclusions and Recommendations for follow-on action on both non-proliferation and disarmament in the coming years.

With the ‘successful’ conclusion of the RevCon, the focus from disarmament, as expected, has shifted. But the nuclear dangers – in newer forms and magnitudes – have not. In fact, the nature of contemporary nuclear threats demands careful consideration and an objective cost benefit analysis on benefits of the continued existence of nuclear weapons vis-à-vis the dangers they generate. This is important because it is an absolute certainty that as long as nuclear weapons exist in the arsenal of one nation, nuclear proliferation – vertical or horizontal – cannot be stopped. Therefore, the only choice that the international community has to make is this – is it worthwhile to retain nuclear weapons even at the cost of slow motion proliferation to other states or non-state actors? Is continued exposure to newer and more dangerous prospects of imminent nuclear use a reality that mankind must always live with? Or can ways be found and the political will be generated to move towards nuclear abolition?

In order to help answer these questions, let us examine some of the new nuclear threats that mark the horizon today. The first threat arises from a possible unraveling of the non-proliferation regime because any potential future candidates for nuclear weapons will emerge out of what is today a near universal NPT. The treaty today has a total membership of 189 nations and only four countries out of the treaty – India, Israel, North Korea and Pakistan – are known to possess nuclear weapons. Therefore, further cases of nuclear proliferation will be of nations who are members of the treaty and who might exercise their right to withdraw from it in order to demonstrate nuclear capability. While every nation would be well within its rights to do so, it would raise serious questions on the future of the treaty. In fact, it would cast aspersions on its very *raison d’être* considering that non-proliferation has been one of the primary objectives of the NPT.

Secondly, among the possible candidates for future nuclear proliferation are states that are mostly considered to be ‘of proliferation concern’ owing to their dubious record of illegal nuclear activity and unresponsive political systems. In the past, nuclear deterrence has been substantively premised on the rationality of actors and decision makers. It has been assumed that it is the ability of the leaders to make a rational cost-benefit calculation of the use of nuclear weapons that makes nuclear deterrence a workable proposition. However, with new players having different sensibilities to rationality and possibly even harboring suicidal tendencies, it is believed that deterrence will be more difficult to impose and sustain. The Four Horsemen pointed to this danger when they wrote, “It is far from certain that we can successfully replicate the old Soviet-American ‘mutually assured destruction’ with an increasing number of potential nuclear enemies worldwide without dramatically increasing the risk that nuclear weapons will be used.” They further warned that the “new nuclear era” would be “more precarious, psychologically disorienting, and economically even more costly than was Cold War deterrence”.⁴

Thirdly, as more states acquire nuclear weapons, there is a concomitant requirement that each one of them has a functional command and control system that can exercise controls

on the nuclear arsenal in order to prevent the possibility of an accidental or unauthorized nuclear launch. The danger in this situation can be explained through a simple analogy. While driving in chaotic conditions, one is required to be in total control of one's vehicle (which might be easy) while also hoping that every other driver also has skilful control over his vehicle so that chances of collision due to the mistake or miscalculation can be minimized. The same applies in the case of possession of nuclear weapons. Weak command and control by any one nuclear-armed nation could lead to an accidental nuclear use and push nations into an unwanted situation of nuclear escalation. However, as more countries acquire nuclear weapons, the ability of each one of them to establish command and control with uniform rigour and singularity of focus on high standards is difficult to assume.

Fourthly, there is a palpable danger of nuclear terrorism executed by a non-state actor. This danger has exacerbated for two reasons – one, there is greater availability of nuclear material and technology owing to the spread of nuclear power programmes. As energy demand grows across developing nations, fuel availability, especially of hydrocarbons, experiences price volatility and concerns over reliable and uninterrupted supplies. Simultaneously, as the pressure to meet growing demands through the use of environmentally friendly sources increases, nuclear power gains in popularity. Some 60 odd nations are believed to have expressed interest in setting up new nuclear power programmes to the IAEA in the last one year. Despite the fact that these energy programmes would be developed under IAEA safeguards, it has been seen in the past that violations, if a country so desires, cannot be completely ruled out. Besides the possibility of clandestine national nuclear weapons programmes, however remote, there also exists the risk of terrorist organizations being able to access fissile material from increasing number of nuclear facilities. Modern day terrorist organizations are proven to be well networked and financially flush. What has probably kept them from wreaking nuclear terrorism until now has been the difficulty in availability of requisite amount of sufficiently enriched fissile material, and the existence of the unsaid nuclear norm or taboo against use of nuclear weapons.

The fifth threat perception arises from the realization that classical deterrence could prove grossly inadequate in meeting these novel threats. Increased numbers of nuclear-armed states as well as players with different parameters of rationality and cost-benefit calculations are new phenomena that deterrence theories and practices have not had to deal with in the past.

It is a travesty of sorts that despite the novelty and severity of the contemporary nuclear threats, there is yet an absence of an imminent, pervasive threat that could involve large-scale catastrophic use of nuclear weapons. And because of this, governmental and non-governmental forces do not appear to coalesce into a sufficiently powerful critical mass that could galvanize movement towards abolition of nuclear weapons. Would the world have to wait for the occurrence of a nuclear catastrophe to experience absolute abhorrence for the weapon and mobilize action against its existence? What can be done to jolt nations and public out of their sense of complacency on nuclear weapons?

It is often opined that the US and Russia, which are the repositories of 95 per cent of the global nuclear stockpile, must take the necessary first steps to further reduce their stockpiles before others could join in the process. While it may be true that the biggest possessors of nuclear weapons have a special responsibility to reduce their weapons, the task of the other

states must also not be abrogated. India's Defence Minister, Mr. V. K. Krishna Menon said before the UN General Assembly in 1953, "Disarmament is a matter for all nations, great or small, in whatever continent they may be and in whatever climate..."⁵ Dr. Rajendra Prasad, India's first President, also echoed the same thought in his inaugural speech at the Anti-Nuclear Arms Convention in New Delhi in 1962, "The non-aligned and neutral people are as much involved in this as those who are knowingly engaged in the criminal conspiracy of creating weapons and conditions that would spell their own annihilation no less than that of others."⁶

Indeed, every member of the international comity of nations has the right and responsibility to make the world a safer place, and they may contribute to this through thought, ideas or action. The rest of the paper is devoted to examining the role that India can and should play in the process. India has sought to contribute towards the creation of an NFWF, both as a non-nuclear state before 1998 and as a nuclear-armed state since then. The following two sections of this paper examine the Indian interpretation of universal nuclear disarmament and suggest some ideas/concepts that the country can offer to facilitate an NFWF.

3. Defining Disarmament – India's Interpretation

The journey to nuclear disarmament must begin with clarity on the end goal being sought. Will it be a world with no nuclear weapons, few weapons, weapons with a few nations or with an international authority of some kind? Ideally, a nuclear weapons free world should constitute a situation wherein there are no nuclear weapons. India interprets nuclear abolition as the complete removal of these weapons from the world. Some, however, contend that an international authority consensually negotiated might need to be crafted as the repository of a few nuclear weapons in case of an unthinkable eventuality. Meanwhile, most NWS are unable to accept or even envision a situation with no or zero nuclear weapons. Even the Four Horsemen restricted themselves to prescribing a low number and a low value nuclear deterrent. They were candid enough to admit that they could not yet visualize a state devoid of nuclear weapons since it appeared to be hidden on the top of some high mountains.

This is the case with most analysts who subscribe to the realist theory of international relations since for them inter-state equations are premised on competitive national interests. When self interest drives nations, it is difficult to visualize how and why they would voluntarily surrender a 'useful' weapon. Therefore, the definition of nuclear disarmament for most fails to get to a state of zero. The report "Eliminating Nuclear Threats" brought out by the International Commission on Non-proliferation and Disarmament (ICNND), for instance, outlines short term, medium term and long term measures for getting to a world without nuclear weapons. In the medium term it has identified 2025 as the year in which the world would actualize a 'minimization point' which would be characterized by "no more than 2000 nuclear warheads".⁷ However, the Commission found itself unable to identify a year by which the world might get to a state of zero. It states, "we have found it impossible credibly to do so [identify a particular target date for achieving the complete elimination of nuclear weapons], given the nature and complexity of the conditions that will have to be satisfied in the final elimination phase move from low numbers to zero."⁸

This problem that each of such reports has identified arises from the inability of the

analysts to visualize an end state with no nuclear weapons. Steeped in the reality of the moment where inter-state relations, especially between nuclear armed states, are marked by trust deficits, it is naturally difficult to imagine a different world order based on a distinct paradigm of cooperative and not competitive security. As George Shultz et al said in their paper in 2008, “From the vantage point of our troubled world today, we can’t even see the top of the mountain, and it is tempting and easy to say we can’t get there from here.”

This is a real challenge, for, unless the nations begin to visualize disarmament as a state of zero, we would be always looking at half measures and confronting trust deficits in inter-state relations. It is only when all NWS express their willingness to give up all their nuclear weapons and the attendant fissile material, delivery systems, infra-structure, etc that there would be a complete change in how inter-state relations get perceived and conceived for the future.

As it did several centuries ago, India needs to help the world rediscover the meaning of zero, this time in the nuclear realm. It must advocate universal nuclear disarmament as a state of zero nuclear weapons – not of fewer weapons or in fewer hands because as long as even one country retains even one nuclear weapon, an NFWF cannot be realized and proliferation cannot be stopped.

India can further help to facilitate the acceptance of zero by providing a unique conceptual understanding of national security. This could eventually bring about a significant transformation of the geopolitical environment. The ICNND report rightly opines that “political-security relations among the nuclear-armed states and their neighbors will have to be cooperative and balanced enough...”⁹ This is obviously important, though not easy to obtain. India’s first Prime Minister used to emphasize the goal of peace over security. The reason behind this is well explained by India’s foremost strategic analyst Jasjit Singh in these words, “An environment of peace would naturally provide security, whereas mere security may or may not bring peace. For example, security in Europe during the Cold War was ensured for 45 years by something like 60,000 nuclear weapons, 94,000 combat airplanes, about 110,000 tanks and massive quantities of other weapons and military systems....” And yet despite all these security measures in place, peace proved to be elusive. The acquisition of nuclear weapons, whether as a national possession or through extended deterrence, brought security but not peace. Therefore, as Singh points out, “Peace has to be given a chance in shaping future paradigms.”¹⁰

It is in this context that India can bring a new paradigm to the understanding of inter-state relations. 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.” Can nations bring themselves to rise above existing paradigms of security to envision a different world order premised on cooperation and the objective of peace rather than security? Can we at least begin to talk, write and debate the contours of a post-nuclear world so that its appeal and advantages can begin to pervade wider spaces – geographical,

and of the mind? And as mindsets change, so will the reality of the day. This is a fact proven in history and the abolition of well entrenched systems such as slavery and apartheid bear testimony to this.

The third concept that India must emphasize in defining disarmament is the linkage between non-proliferation and a world free of nuclear weapons. From the mid-1960s onwards, the time that the NPT was being negotiated, India highlighted this linkage and advocated the conclusion of the treaty more as a disarmament and less as a non-proliferation measure because it believed that the latter would be automatically taken care of if the former could be obtained. Illustrative of this approach is one of the many statements made by V. C. Trivedi, India's representative to the Eighteen Nation Disarmament Committee (ENDC) in August 1965. He said, "When we are talking... of non-proliferation, the fundamental problem we have to consider is that of the proliferation that has already taken place... A non-proliferation agreement is, therefore, basically an agreement to be entered into by the nuclear powers not to proliferate nuclear weapons... A prohibition to proliferate applies firstly to those who are in a position to proliferate or reproduce themselves and only secondarily to those who may subsequently be in such a position."*

The NPT, however, evolved in exactly the reverse order with a higher emphasis on non-proliferation and a diluted commitment to disarmament. The folly of this approach is evident in the state of the NPT today when the treaty is near universal and yet the risk of nuclear proliferation has not diminished. This is primarily because without a credible prospect of nuclear disarmament, the existence of nuclear weapons set into motion a cycle of threat perceptions that can only lead to acquiring the capability. Since nuclear weapons cannot be deterred by any other military means, every nation confronted with the threat of nuclear use or blackmail is compelled to acquire them. This vicious cycle can only be broken when none has nuclear weapons and when such a state is mandated through an international convention and maintained through effective verification.

Envisioning a state of zero nuclear weapons and a world order premised on cooperative peace and security where non-proliferation becomes an automatic by-product of disarmament can be the three most constructive concepts that India could contribute to the making of a nuclear weapons free world. 63 years ago Mahatma Gandhi, father of the Indian nation, lived to see his dream of an independent India turn into reality. He achieved this through the moral conviction premised on non-violence, even though there were several detractors of this approach from amongst his own countrymen. This was natural since it was a route to independence that had never been tried before. But Gandhi traveled down this road and achieved success. Comprehensive global security will also have to be anchored in non-violence, however impractical and impossible this may sound today. As Mahatma Gandhi had presciently stated in the aftermath of the first use of nuclear weapons, "The moral to be legitimately drawn from the supreme tragedy of the bomb is that it will not be destroyed by counter-bombs, even as violence cannot be destroyed by counter-violence. Mankind has to get out of violence only through non-violence."†

* Statement of V C Trivedi as reproduced in Documents on India's Nuclear Disarmament Policy, vol. II (New Delhi; Ministry of External Affairs), p. 590.

† As cited by Rajiv Gandhi in his address to the United Nations Third Special Session on Disarmament in June 1988. This is when he presented the Action Plan for Ushering in a Nuclear Weapon Free and Non-Violent World Order. For the action plan see, Manpreet Sethi, ed., *Towards a Nuclear Weapon Free World* (New Delhi: Knowledge world, 2009), 151-156.

Raising its voice over the cacophony of realism, India must remind the world that the right route to civilized survival lies in establishing a world order on the principles of coexistence, non-use of force, non-intervention in the internal affairs of others and the right of every state to pursue its path of development. These principles, in fact, are enshrined in the United Nations Charter, but appear to have faded from immediate consciousness. India must help to revive their importance in the present moment if the world is to be stopped from sliding into a realist's vision of 'nasty, brutish and short' for any use of nuclear weapons would certainly make it so.

4. India's Ideas for an NFWF

The diplomatic energy and forward looking ideas that India invested into the pursuit of universal nuclear disarmament in the first four decades of its independence are well documented.¹¹ The Partial Test Ban Treaty (PTBT), the nuclear non-proliferation treaty (NPT), the Comprehensive Test Ban treaty (CTBT) are all treaties that were originally proposed by India as measures aimed at nuclear disarmament.* It is a different matter that they ended up as purely non-proliferation measures that were unable to address the threat perceptions of India and hence evoked little enthusiasm in or support from the country. In fact, over the last two decades the feeling of frustration, cynicism and a sense of being let down by the international community appears to have swayed Indian foreign policy. This has led to a relative silence on India's part on nuclear disarmament. Therefore, during the recent developments in this field, India has largely adopted a wait and watch approach. These have been perceived as welcome developments, but given the country's long experience of having drawn a blank on similar steps in the past, India has chosen to watch from the sidelines.

Of course, the country still introduces the resolution entitled "Reducing Nuclear Dangers" at the UNGA as it has done for more than the last two decades now. The Prime Minister and India's representative at the UN continue to reiterate India's firm commitment to disarmament and have listed seven steps towards nuclear disarmament. These include:

- 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;
- Negotiations 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 the use or threat of use of nuclear weapons; and
- Negotiation of a nuclear weapons convention prohibiting the development, production,

* For a detailed account of India's efforts in this regard see Manpreet Sethi, "The Struggle for Nuclear Disarmament", in Jasjit Singh ed., *Nuclear India* (New Delhi: Knowledge World, 1999), 75-92.

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 India's championing the cause of disarmament has been consistent, it is also true that there have been no proactive new proposals that India has made in the last few years. To some extent, this is understandable. Given the lack of support that some of the Indian proposals have evoked in the past, it is inevitable that the Indian foreign policy establishment should approach nuclear disarmament with far greater cynicism. However, despite this apparent loss of enthusiasm, there is no denying that the ultimate, final nuclear security for India lies in the universal abolition of nuclear weapons. Hence, it is of utmost importance that India should continue to aspire towards universal nuclear disarmament since in that ideal state lies the promise of better security for the nation, as also for the rest of the world.

Before India conducted the tests in May 1998, there were many who dismissed India's initiatives towards elimination of nuclear weapons as a case of sour grapes. It was said that since India did not possess nuclear weapons, it canvassed for their elimination so that none would have the advantage. After 1998, there are many, especially within the country, who have argued that India must now give up its moralist stance on nuclear disarmament and concentrate instead on building an effective and reliable deterrent.

But the truth of the matter is that for India, an NFWF is best suited for national security. The requirement for India's nuclear weapons is only to meet the nuclear threat from the adversaries in the region. So, India's position on universal nuclear disarmament is rooted in the national security interests of the country and it must continue to contribute to the search for ways and means to achieve nuclear abolition. It cannot afford, least of all for the sake of its own and the larger security, to remain detached from the evolving debate on universal nuclear disarmament. It must remain engaged in the nuclear abolition discourse and continue to generate fresh thinking on enhancing the desirability and feasibility of universal nuclear disarmament.

To this end, this section of the study suggests some ideas that India can champion in international fora today for the early realization of universal nuclear disarmament. These are largely derived from the Indian nuclear doctrine and, therefore, are being practiced by the nation itself. Most of these ideas are premised in reducing the salience of nuclear weapons so that over time, as they lose their perceived utility, it could become easier for nations to give up national controls over these weapons. Human nature does not permit the discarding of anything that it considers to be of value. Therefore, a devaluation strategy that deprives the weapons of utility and renders them unusable through a series of measures can prepare the ground for their eventual elimination.

4.1 Restricting the Role of Nuclear Weapons

One way of leaching nuclear weapons of their perceived utility would be to restrict the role and the circumstances in which the weapon can be used. If there is a universal treaty or understanding circumscribing these two parameters, the weapons will be restricted to a very limited utility and over a period of time it would then be possible to remove them from national arsenals. Fortunately, it is for the first time that the idea of reducing the role

of nuclear weapons found an echo in President Obama's speech at Prague in 2009. Among the steps that he outlined for reaching a world without nuclear weapons was the acceptance of a set of measures to be taken by the US to reduce the role of the nuclear weapons in US national security strategy. The Nuclear Posture Review 2010 of the US also conceives the use of nuclear weapons only in "extreme circumstances". This is a move away from the US National Security Council Report 68 of 1950 which mandated the use of nuclear weapons against the overwhelmingly superior Soviet forces in Eastern Europe. Meanwhile, the Russians given the state of their conventional weaponry seem to have adopted the earlier American position today. Difficult as it would be, a reassessment of nuclear doctrines to make nuclear weapons less attractive by restricting and eventually obviating their role in international politics is imperative.

The Indian nuclear doctrine grants a narrow role of nuclear deterrence to the weapon. It is firmly rooted in the belief that nuclear weapons are a political instrument for deterrence and not a military tool for war-fighting. This assertion for India emanates from the comprehension of and abhorrence for the high destruction potential of the nuclear weapon that makes its use unthinkable for any rational political end.

An articulation of a narrow role for nuclear weapons holds the promise of disarmament as against doctrines that ascribe a multi role utility to them. Several countries see them as a weapon to offset their conventional military inferiority (Russia and Pakistan), to deter chemical and biological weapons (USA, Russia, France and India), to guard against regime change (North Korea), to retain prestige and status (UK and France), and to deter interference in the conduct of their foreign policy (Russia and China). Each one of these perceptions enhances the utility of the nuclear weapon beyond its primary purpose of nuclear deterrence and hence motivates others to reach out to them. Therefore, as a first step, it would be necessary to undertake some redrafting of nuclear doctrines to reduce the role of nuclear weapons. India, in this regard, leads by example.

*4.2 Adopting Comprehensive Security Assurances**

Nearly all states with nuclear weapons continue to maintain the centrality of nuclear deterrence for national security. While conceding that the nuclear weapons have lost some of their earlier relevance in the contemporary security environment, and expressing a willingness to reduce (or, should one say, rationalize) the numbers of nuclear warheads in their arsenals, the nuclear weapon possessors have nevertheless been chary of renouncing them owing to the uncertainty of the evolving security environment. Such a position, obviously, raises the attractiveness of the weapon for the non-possessors too.

It was at least to partially remove the attraction of nuclear weapons as a strategic equalizer that the concept of negative security assurances (NSA) to the NNWS party to the NPT had first developed. It amounted to the NWS providing an assurance or a guarantee not to use or threaten to use nuclear weapons as instruments of pressure, intimidation or blackmail against states that had formally renounced them. However, none of the NWS as recognized by the NPT has actually made these assurances available unconditionally or as part of a binding legal agreement. For instance, nearly all, except China, maintain the right to use nuclear

* Arguments developed in this and the following sub-sections of the paper are derived from an article written by the author for the ICNND in 2009.

weapons to respond to attacks by NNWS in alliance or in association with other NWS. The Indian nuclear doctrine too has stated that the country would “not resort to the use or threat of use of nuclear weapons against States which do not possess nuclear weapons, or are not aligned with nuclear weapon power.”*

It is noteworthy that the recently concluded NPT RevCon 2010 has called upon the Conference on Disarmament to begin discussing effective international agreements for extending legally recognized negative security assurances to NNWS. The Action Plan put forth by the RevCon requires the CD to “discuss substantively, without limitation, in order to elaborate recommendations, including an internationally legally binding instrument.”

Meanwhile, positive security assurances, or the guarantee that other NWS would come to the rescue of a state under nuclear attack have been held out on the basis of the alliance systems that existed during the Cold War period. This assurance of extended nuclear deterrence is believed to have halted nuclear proliferation since the allies were promised protection under the nuclear umbrella of a NWS. But, it today stands as one of the many hurdles in the path of nuclear disarmament. It is feared that in case the NWS take away the promise of nuclear protection from their allies, the latter would be tempted to develop/acquire a capability of their own.

Negative security assurances offer one way to address this challenge. The conclusion of a legally binding agreement that pledges this assurance would reduce the attractiveness of the weapons for the non-possessors, whether allies or non-allies of other NWS and eventually remove the need for extended deterrence since NNWS would not fear a nuclear attack from other NWS. At the same time, universal instead of alliance-based positive security assurances would also significantly allay threat perceptions and reduce the desire for acquiring a national nuclear capability.

Comprehensive security assurances would provide credible guarantees of non-use of nuclear weapons against NNWS as well as the promise that others would come to their aid in case they were threatened with nuclear use. Moreover, a mix of positive and negative security assurances would be far more credible for the NNWS than a mere reduction in arsenals of the NWS, which are undoubtedly useful, but of little relevance since even a few hundred warheads are as threatening as several thousands. Meanwhile, this step would also provide the benefit to NWS of not having to immediately renounce their nuclear arsenals, thus allowing them to maintain their national sense of security until they are ready for the last step.

4.3 Accepting No First Use of Nuclear Weapons

While security assurances to the NNWS would significantly reduce the attraction of nuclear weapons, a universal acceptance of NFU by nuclear weapon possessors would remove the possibility of a nuclear exchange between NWS too.† In fact, adoption of NFU

* Para 2.5 of the Draft Report of National Security Advisory Board on Indian Nuclear Doctrine, 17 Aug 1999 as available on <http://www.meaindia.nic.in>.

† At present, only two countries – India and China – accept NFU. China’s NFU, however, does not apply to its own territory or territories that it claims as its own. Hence, there is ambiguity regarding the possibility of Chinese nuclear weapons in a conflict over Taiwan, or Arunachal Pradesh, an Indian state to which China lays claim. Meanwhile, the Indian NFU which had been unconditional as spelt out in the draft nuclear doctrine presented to the government on 17 Aug 1999 by the first National Security Advisory Board, has since been somewhat diluted by a Cabinet Committee on Security note on operationalisation of the doctrine put forth on 04 Jan 2003 and which does not rule out India’s nuclear use against a chemical or biological weapon attack.

would be a crucial step towards the eventual elimination of nuclear weapons since it would involve an assurance from every country that it would not be the first to introduce nuclear weapons into a conflict. Since there will not be a first, it would effectively mean no use of the nuclear weapon and hence a reduced dependence on the weapon in national security strategies over a period of time.

Of course, there are critics of the NFU who dismiss it as nothing more than a declaratory policy that means little once hostilities break out between nuclear nations. Such criticism, however tends to overlook the fact that the adoption of NFU automatically translates into a certain kind of nuclear force posture, strategy and deployment pattern that ensures that the promise of NFU is kept. Doctrines that ascribe a war-fighting role to nuclear weapons envisage 'first use' to retain the military advantage and, therefore, adopt launch on warning or launch under attack postures as also pre-emption. To undertake pre-emption both sides need a large infrastructure in the form of command and control, early warning, etc. NFU, on the other hand, frees the nation of such requirements. It allows for greater response time for self and a more relaxed posture for the adversary since he is liberated of the 'use or lose' syndrome. In fact, it must be highlighted that a universal NFU would be even more relevant as nuclear weapons reduce. With small nuclear forces, the temptation to launch a disarming first strike would be high because of the 'use them or lose them' compulsions. But an NFU posture would remove this temptation for self and the adversary. If the adversary is under constant fear that a nuclear strike is imminent, its own temptation to use nuclear force would be higher. Therefore, substantive reductions in warheads accompanied by acceptance of NFU would be significant preparations for an NFWF.

Acceptance of NFU enables de-alerting, de-mating and de-targeting, all three steps that are critical for reducing the existential dangers that accompany nuclear weapons. India's draft Resolution "Reducing Nuclear Dangers" that has been tabled in the UNGA every year since 1978 highlights that the hair trigger posture of nuclear forces carries the unacceptable risk of unintentional or accidental use of nuclear weapons. However, while this resolution has had the support of NAM nations, it continues to be opposed by NATO and European states who have questioned India's sincerity in sponsoring a resolution that calls for a change of posture of the NWS but has little application for India.¹²

The fact of the matter is that India's no first use posture liberates it from the need to maintain its arsenal on a hair trigger alert. If other nations too were to accept NFU through the conclusion of a universal NFU treaty, it would not only reduce the dangers of an accidental launch of nuclear weapons, but also heighten the chances of no use of nuclear weapons. In fact, a de-alerted and de-mated nuclear arsenal provides for a 'graduated deterrence' response thereby allowing more time to resolve the crisis even as the nations move towards a state of full alert. Overall, an NFU has the potential to lessen inter-state tensions, increase mutual confidence and thus reinforce a cycle of positives. It would enhance the inclination towards non-proliferation by sending a strong signal of the diminishing utility of nuclear weapons. This would be a first-of-its-kind agreement amongst all NWS and would signify great symbolic political value. It would lessen the drive of each NWS for new and modernized nuclear arsenals and thus lower inter-state tensions.

Meanwhile, the NFU would allow the NWS to retain the notional sense of security that

they derive from their national nuclear arsenals. NWS would not only pledge not to be the first to use nuclear weapons, but could always retaliate to inflict unacceptable damage. They would have the theoretical freedom to possess the weapons but pledge not to use them first. Gradually, the desire to possess, or improve an unusable weapon would lessen, making it easier to give up the weapon. Therefore, this step would work towards enhancing the gradual irrelevance of the nuclear weapon, especially when reinforced by a ban on use or threat of use of the weapon, quite as on the pattern and experience of the 1925 Geneva Convention. It may be recalled that it was 68 years after the Geneva Protocol that the Chemical Weapons Convention was finally signed in 1993. The decision in 1925 itself came after a large scale use of chemical weapons by both sides in the First World War which resulted in tens of thousands of casualties. Despite the high level of damage suffered, it was realized that chemicals weapons did not actually make a difference in the outcome of the war and the nations that used them reached the conclusion that those weapons were not effective in war.

Two questions, however, beg examination when one considers the decision to accept 'no first use' of nuclear weapons. Would a decision/treaty that bans the first use of nuclear weapons lead to an arms race in the field of conventional armaments? Would nations that give up the nuclear weapon move towards greater acquisition of conventional weaponry in order to bridge a perceived security deficit? While there are no empirical studies on the subject, it might well be the case that in the short term, nuclear disarmers lean towards greater conventional acquisitions. However, this trend is unlikely to last if nuclear disarmament is either the result of or results in more cooperative and secure inter-state relations. It is natural to assume that NWS will decide to disarm on the basis of a broadly consensually agreed upon verifiable process. Such a step would obviously generate greater confidence as it progresses and would have a benign effect on the international security climate. Hence, the possible spurt in conventional modernization could subside over a period of time. This trend could be further reinforced by a parallel process of conventional arms control akin to the Conventional Forces in Europe model.* It may be recalled that the Rajiv Gandhi Action Plan of 1988 too had catered for simultaneous reduction in conventional weaponry as a means for moving towards a nuclear free and non-violent world order.†

Parallel agreements that provide means to control a conventional arms race would ease the process of nuclear disarmament and especially help address the second, and a far thornier question of how one could get countries like North Korea or Pakistan, who perceive their nuclear weapons as 'strategic equalizers' as well as potent bargaining chips, to prescribe to the NFU. The DPRK has never been shy of brandishing its nuclear capability to drive a hard bargain with a country as powerful as the United States. Islamabad, meanwhile, has always rejected India's offer of a bilateral NFU and maintains its nuclear deterrence by projecting a low nuclear threshold. In order to deter a conventional war with a superior Indian military, Pakistan has a first use nuclear doctrine akin to NATO's stance vis-à-vis the Soviet military during the Cold War period. Acceptance of the NFU goes against the purpose of the national nuclear arsenal in the case of such countries.

However, a case for convincing/compelling states to accept a universal NFU may be

* The author is grateful to Air Cmdr Jasjit Singh, Director, Centre for Air Power Studies, for bringing out this point in a private conversation.

† The full text of the Action Plan for Ushering in a Nuclear Weapon Free and Non-violent World Order is available as Appendix 2 in Manpreet Sethi ed. *Towards a Nuclear Weapons Free World* (New Delhi: Knowledge World, 2009), 151-156.

made on three grounds: First, an international consensus on and acceptance of NFU will put pressure on such countries and a united approach could provide the necessary firmness to the international community to deal with holdouts. Given that it is a question of survivability of human lives, it is not an issue that can be taken lightly; second, it is a well known fact established on the basis of elaborate war gaming exercises that a weaker military power can never come out better after the first use of nuclear weapons against another nuclear state. Therefore, first use against a nuclear adversary that also happens to have superior conventional and substantive nuclear capability is nothing short of suicidal for the first user. The admittance of this reality would demonstrate the futility of retaining a first use posture; third, when the NFU is accompanied with comprehensive security assurances, a Convention that outlaws the use of nuclear weapons, and conventional arms control, it should address the threat perceptions of these nations.

4.4 Prohibiting the Use or Threat of Use of Nuclear Weapons

A logical step that would flow out of the measures explained above would be to arrive at an international convention prohibiting the use or threat of use of nuclear weapons. This intention is encapsulated in the draft Resolution entitled “Convention on the Prohibition of the Use of Nuclear Weapons” that India has annually tabled at the UNGA since 1982.* The resolution aims at prohibiting the use or threat of use of nuclear weapons under any circumstances, a step that can substantially reduce the prospect of nuclear use, and contribute towards the creation of a climate for a subsequent agreement on the prohibition of nuclear weapons in toto.

In case all NWS were to commit under a convention that nuclear weapons shall not be used and that any country using them or threatening to use them shall face commensurate retribution and a total boycott by all the countries of the world, it would make these WMD significantly impotent and useless. The value of nuclear weapons would fall instantly and further proliferation would voluntarily stop. None would want to acquire weapons that could not be used, not in war, and hence not as a deterrent either. Consequently, the unique status that nuclear weapons are deemed to provide would no longer seem worth aspiring for. Meanwhile, even ‘rogue’ states would no longer have any use for these weapons for fear of serious reprisals. Therefore, a total ban on the use of nuclear weapons would directly strike at the very root of their utility.

Interestingly, the UN General Assembly has periodically considered resolutions to this effect. Far back in 1961, it had adopted a declaration by a vote of 55 to 20 with 26 abstentions stating that the use of nuclear weapons was contrary to the “spirit, letter and aims of the UN”. The US and NATO then opposed it contending that in the event of aggression, the attacked nation should be free to take whatever action with whatever weapons not specifically banned by international law. India has long been proposing the resolution mentioned earlier for a multilateral, universal and binding agreement prohibiting the use or threat of use of nuclear weapons through an international convention. Predictably, the P-5 have opposed the resolution and they propose instead a step-by-step process that embraces unilateral, bilateral and multilateral measures. † Ironically, Japan, for all its abhorrence of nuclear weapons, also

* UN General Assembly Resolution 63/75 (L.15).

† See “Appendix: Summary of Resolutions”, *Disarmament Diplomacy* <<http://www.acronym.org>>

abstains for reasons similar to those voiced by the US.

Meanwhile, the existing ‘advisory opinion’ delivered by the International Court of Justice in 1996 on the legality/illegality of use of nuclear weapons by a nation has not clearly removed the ambiguity over the issue. The Court did conclude unanimously that a threat or use of nuclear weapons that is contrary to Article 2, paragraph 4 of the UN Charter and that a failure to meet all the requirements of Article 51 on self-defence would be unlawful. However, it could not conclude definitively whether such an act would be generally contrary to the rules of international law applicable in armed conflict and particularly to the principles and rules of humanitarian law, and also whether the act would be legally justified in an extreme circumstance of self-defence when the survival of the state is at stake. NWS have taken advantage of this ambiguity in order to maintain nuclear arsenals for deterrence. However, the Court’s conclusion that there is no specific law prohibiting the use of nuclear weapons itself demands that the lacuna be removed through the enactment of a law or a convention.

A convention banning nuclear use, in fact, would send an important signal to all concerned constituencies – it would devalue the weapon substantially as a currency of power and status; it would reduce the likelihood of a nuclear exchange between NWS; it would reassure the NNWS and reduce their temptation to acquire these weapons for deterrence; it would reinforce the taboo against nuclear use and this would influence non- state actors too.

5. Conclusion

In 1988 Rajiv Gandhi 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 an unfortunate fact that humanity has not progressed down the road to a nuclear-weapons-free world. So, while the numbers have reduced, the dangers from nuclear weapons remain and have only grown in dimension and become more sinister since then. 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 have 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.”

With an increase in the nuclear dangers, there must come a simultaneous progression in the understanding that the only sustainable route to mitigating these dangers has to pass through a nuclear-weapons-free world. The problem in going down this route, however, is

that it is not well laid out and hence calls for taking a far greater risk of the unknown variety. As NWS move down to lesser numbers and eventually to zero, how would inter-state security look? Would conventional wars become easier and more rampant with the disappearance of deterrence? After all, it is widely assumed that the presence of nuclear weapons has imposed constraints on the conduct of war. The US and USSR never did risk a direct confrontation. Nor did India and Pakistan overstep certain national boundaries in moments of crisis since 1998. However, the problem with applying this premise forever into the future is that it can never guarantee the non-use of a weapon that is available with nations. In fact, the norm of non-use could be threatened by a number of factors. It is for this reason that the norm should be made legally binding through a set of interlocking mechanisms between the NWS and NNWS.

Would not some countries still be prone to cheating on their commitments of not developing nuclear weapons? Would disarmament be able to stop every incidence of nuclear terrorism? Unfortunately, there are no easy or definitive answers to these questions. Yet, it can be said with utmost certainty that as new actors emerge and multiple nuclear poles crystallize, the game of deterrence would get more complicated. Also, given the nature of contemporary human habitation in mega cities, any use of nuclear weapons – deliberate or unintended, state, non-state or a hybrid version – would mean catastrophic damage of unimaginable proportions. Hence, the criticality of a credible nuclear disarmament plan cannot be underestimated. The four steps towards disarmament, as explained in detail in the paper, hold the combined promise of reducing the salience of nuclear weapons, reducing the risk of proliferation, lessening the danger of a nuclear war, reinforcing the irrelevance of nuclear weapons, strengthening the norm of non-use, and most of all, reducing the threat perceptions between states. Holistically taken, they would contribute to a stable world order.

Nuclear weapons can only be abolished when the belief systems behind their utility and use change. Existing norm of non-use of nuclear weapons needs to be institutionalized into a legal regime before the scars of Hiroshima and Nagasaki fade from human memory. In this context, it would be useful to draw upon the experience of the outlawing of the chemical weapons. These weapons were banned from being used by the Geneva Convention in 1925 and it was only almost seven decades later in 1993 that the Chemical Weapons Convention actually came into being. Over the seventy odd years, the chemical weapons continued to exist with nations, but their utility steadily diminished and the norm of their non-use got strengthened. Following nuclear weapons could also be made dysfunctional by first restricting their role, then reducing the circumstances in which their use could be considered and finally delegitimizing their use or threat of use. As the value of the stock of nuclear weapons falls, nations will find it less painful to discard them. Universal nuclear disarmament can then become a reality.

The US representative to the UN in his reply to the appeal in 1956 for an agreement on cessation of nuclear testing by Krishna Menon, the Defence Minister of India then, had said, “The simple fact is that in the absence of arms control and in the face of constant new developments, a wide variety of weapons is required to provide the versatility and flexibility essential to defend against aggression whenever, wherever and however it may occur.”¹³ If every country takes recourse to such a justification then we would be heading towards a chaotic and armed to the teeth world order. In the course of history it has been repeatedly

demonstrated that there can be no permanent monopolies over armaments. Gunpowder, machine guns, tanks, nuclear weapons have all provided a temporary advantage for those who acquired them first. Thereafter, the weapon spread to new capitals and shores. Unfortunately, in this spread, humanity always came out the loser.

Prime Minister Nehru had cautioned the world in 1962, “Time is limited. If you do not put an end to it soon enough, it may later on be beyond the capacity of human beings or nations to stop it.” The time is even shorter now. It is absolutely imperative that nations stop this slow march to humanity’s destruction.

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NEWS & DOCUMENTS

Report on Activities of WAAS and Club of Rome

Employment is one of the crucial problems of the contemporary world. The World Academy's Global Employment Challenge Project (launched in 2009 and on-going) and the Club of Rome's International Conference on Concerted Strategies for International Development in the 21st Century, Bern, November 17-18, 2010 have both concluded that a fundamental paradigm change is required in economic theory, policy and practice. The need and significance of this paradigm change was reinforced in meetings with European Commission President J.M. Barroso (Brussels, January 2011), the Director and Head of the Analysis Team of the EC's Bureau of European Policy Advisers, Mr. J.C. Thébault and Mr. P. Lagrain (Brussels, February 2011), and with the Executive Director for Employment at ILO, Mr. J.M. Salazar-Xirinachs, and his associates (Geneva, March 2011). The paradigm change calls for a new economic theory outlined in the first issue of *Cadmus* by O. Giarini and collaborators. The South East European Division of WAAS and the national associations of the Club of Rome have organized workshops aimed at increasing employment rates in SEE countries (Zagreb, March 2011). The new framework emphasizes the central role of human capital and has as its primary objective enhancing human security.

Human security is at the foundation of the Pugwash Movement, WAAS and the Club of Rome, encompassing the entire spectrum of human needs from full employment and social stability to total disarmament and abolition of nuclear weapons. The WAAS workshop on "Abolition of Nuclear Weapons" organized in cooperation with CAPS (New Delhi, February 2011) explored one end of the equation. A companion WAAS-CAPS workshop on "Revolution in Human Affairs" explored the interconnectedness between economic and security issues, with focus on the linkage between unemployment and social unrest, marking the launch of the WAAS project on this theme.

Development and human security should be sustainable. An article "Human Capital and Sustainability" was published in the journal *Sustainability* (November 2010). WAAS co-sponsored the Global Round Table "Limits to Sustainability: sustainability, values and responsibility" (Budapest, November 2010). The national associations of the Club of Rome in Slovenia, Austria and Croatia together with the European Support Centre of the Club of Rome organized a workshop "Space Exploration and Sustainability" (Ljubljana, November 2010).

Abolition of Nuclear Weapons

CAPS-WAAS Workshop, New Delhi, February 7-8, 2011

Nuclear weapons present a problem of immense complexity involving a multiplicity of actors, both nuclear and non-nuclear weapon states as well as non-state actors, with differing perceptions and security threats and compounded by the growing importance of nuclear energy and technological advances in conventional weaponry and cruise missiles. Yet a few things are transparently clear. Nuclear weapons are unusable. They are a destabilizing threat to international security and non-proliferation. Their use or threat of use constitutes a crime against humanity. The current non-proliferation regime is counter-productive, because it actually provides incentives for proliferation. As a democratically governed, nuclear weapons power that has consistently called for universal disarmament during the past 60 years, India has the credibility, motivation and perspective needed to take the lead in pushing for universal nuclear disarmament. These and related themes were examined at an international workshop jointly organized by the Centre for Air Power Studies (CAPS) and the World Academy of Art and Science (WAAS) in New Delhi on 7-8th February, 2011, involving Fellows of the Academy, members of CAPS research faculty, and high level experts from India's military and strategic community.

There was broad agreement that urgent steps should be taken to de-emphasize the role of nuclear weapons in national security strategy, delegitimize the use of these weapons under any circumstances, universalize the ban on first use as well as testing, and provide positive assurances against nuclear attack. But all of these issues are interlinked and progress on any one depends on proportionate effort in other spheres. Therefore, it was also recognized that, however necessary such measures are, they may not be sufficient to effectively address the issue. A complete and final solution necessitates adoption of a comprehensive strategy that addresses the threat perceptions of states.

Nuclear weapons undermine rather than enhance national security. Jasjit Singh, Director of CAPS, stated that "global abolition of nuclear weapons is a national security imperative for India." While India's nuclear arsenal may deter other nations from launching a nuclear attack, they complicate the country's ability to deal with terrorism. The proliferation of nuclear weapons in Asia and the risk of their falling into the hands of Non-State Actors, especially the Islamist/jihadi terrorists, increase the danger. India and the world would both be more secure, if any use of nuclear weapons were declared a crime against humanity and the weapons themselves completely eliminated. The only choice before mankind is between abolition of nuclear weapons and/or increased proliferation of such weapons. The road to abolition is going to be long and full of difficulties. Only unambiguous political resolve by major nuclear powers can get the world moving steadily on that road. The greatest obstacle is the persistent belief in the utility of nuclear weapons, which enjoyed widespread support during the Cold War and is now being embraced by other countries seeking to enhance their security, prestige and power.

With Asia emerging as the new locus of global power, India's role in international security and its ability to push for universal nuclear disarmament will increase. Unless the development of scramjet technology is banned through a United Nations treaty, India

and other countries will be compelled to develop it. High accuracy levels of conventional ballistic missiles and the use of nuclear delivery systems with conventional warheads is increasing the risk of unintended use of nuclear weapons (especially in countries with “first use” nuclear doctrine and strategy). Bilateral cooperation between the US and Russia on ballistic missile defense systems will not resolve problems of international security, nor facilitate disarmament, as it may heighten the threat perceptions of other countries. Use of nuclear weapons for multiple purposes such as insurance against regime change, bargaining, blackmail, fomenting terrorism, etc. has altered the deterrence dynamics, making it more difficult to make nuclear weapons states renounce these weapons. Pushpa Bhargava, WAAS Trustee and former member of India’s National Security Advisory Council, identified the need to create a knowledge-based society in which every citizen understands the dangers of nuclear weapons as a pre-requisite for creating conditions conducive for a nuclear weapons free world.

A comprehensive solution to the nuclear threat must involve a shift from the current competitive security paradigm in which each nation is responsible for its meeting its own security needs to a cooperative security system in which all peace-seeking nations join together and enjoy collective protection from external aggression. Air Marshall Vinod Patney stressed that countries with weaker conventional weapons would have no incentive to renounce nuclear weapons unless a cooperative system was put in place to meet their security needs. Establishing rule of law based on cooperative security will go much further in enhancing national security than its current approach of seeking full spectrum dominance in security technologies. Garry Jacobs, chair of the WAAS Committee on Peace & Development, pointed out that such a system will ultimately require establishment of a global military capability similar to NATO capable of backing up security guarantees, as proposed by the International Commission on Peace & Food in its report to the UN.¹

Great changes in history result from changes in our fundamental ideas and beliefs, of which the history of chemical weapons is a relevant example. The Hague Conference was conducted in 1899 to abolish chemical weapons, but it was not until 1925 that the Geneva Convention actually declared that the use and threat of use of chemical weapons is a crime against humanity. The convention did not require countries to give up chemical weapons and, in fact, permitted their use in self-defense. It was only in 1993, more than a century after the issue was first taken up by the international community, that a global convention to abolish chemical weapons was signed.

Jonathan Granoff, President, Global Security Institute, documented the recurring history of monitoring errors and accidents relating to nuclear weapons in the USA and elsewhere, showing that even the most technologically sophisticated precautions cannot ensure protection against accidental or mistaken use of these weapons so long as they exist in any national arsenals.² He argued that the existing nuclear taboo should be transformed into a legal norm. It is not sufficient to only lay down the steps for disarmament. It is also necessary to pass legislation giving them the force of law. Substantial progress has been made in delegitimizing nuclear weapons under international humanitarian law, but more is required to remove the legal justifications for their existence. A Nuclear Weapons Convention may not be immediately possible in the present context, however, it is time to begin a formal preparatory process which would follow up on the proposal of the UN Secretary General to make progress

on obtaining a convention or framework of agreements that will lead to nuclear disarmament. India could play a significant role based on its history, interests, and articulated policies. The political opportunity is open given the joint statements of US and Indian heads of government. This process would include the many states and leading civil society organizations currently frustrated with the lethargic pace of disarmament, the distance between rhetoric and practice, and would address and plan out strategies to identify and overcome the current roadblocks to progress. Reduction in nuclear arsenals has been mainly by way of rationalization of numbers due to changed threat perceptions, which is of limited value for universal nuclear disarmament. There is need for an alternative approach that devalues nuclear weapons by legislating a universal no first use agreement or a convention banning the threat or use of nuclear weapons in order to leapfrog to disarmament even with the present numbers of nuclear warheads.

The legal status of nuclear weapons poses a difficult, classical problem of the clash between law and effective power, as emphasized by WAAS trustee Winston Nagan. The sheer power of nuclear weapons represented a reality that transcends the international law of the U.N. Charter. President Obama's decision to look to a world free of the threat of nuclear destruction is in keeping with the tradition of law that insists on the importance of reason as an appropriate limit on the unrestrained exercise of power. Commanding a globally unified position on nuclear weapons and using effective strategies of both law and power to build a foundation of international law that will support the process of complete nuclear disarmament.

It is impossible to prevent nuclear proliferation unless there is a visible credible commitment to nuclear disarmament. Manpreet Sethi, Senior Fellow, CAPS emphasized that non-proliferation is unsustainable unless the same rule is applied uniformly and without discrimination. Resurgence of interest in nuclear energy complicates the present challenges of enforcing non-proliferation. Research and development on proliferation-resistant reactors, multilateralization of nuclear fuel cycles and greater efficacy of safeguards can offer some ways of preventing proliferation. Multinational fuel supply schemes or the IAEA fuel bank suffer from the potential problems of political manipulation and discrimination and hence countries are yet wary of these ideas. Focus on non-proliferation has largely been on restricting supplies through technology denials and export controls. But these measures have had only limited success. It is necessary, therefore, to work towards removing the attractiveness of nuclear weapons. This calls for addressing the security perceptions of nations.

Bob Berg pointed out that levels of violence have declined dramatically since the end of the Cold War as a result of the reduction in superpower rivalry, a five-fold deployment of multilateral security forces under the UN, rapid economic growth, especially in Africa, home to 6 of the 10 fastest growing economies in the world, and increasingly active civil society organizations. These developments have generated a positive atmosphere for progress on nuclear disarmament.

Ivo Šlaus, Trustee of WAAS, member of Pugwash and the European Leadership Network perceives abolition of nuclear weapons as the first step toward a world without war. He reinforced India's potential leadership role, stating that India's heterogeneous society and inclusive democracy serves as a model for other emerging nations in the 21st century. What

is needed is a comprehensive solution that addresses the inter-linkage between inter-state security and nuclear abolition. This, in turn, calls for a new intellectual framework that focuses on a broader conception of human security that includes political freedom, access to food and remunerative employment, ecological sustainability and social stability. These in turn must be founded on a truly democratic system of global governance. Nuclear disarmament is inevitable because it fulfills humanity's deepest aspiration for peace and security.

This news article is based on a report prepared by Jasjit Singh, WAAS Fellow and Director of the Centre for Air Power Strategy, New Delhi.

Notes

1. International Commission on Peace & Food, *Uncommon Opportunities: Agenda for Peace & Global Development*, Zed Books, London, 1994.
2. Jonathan Granoff, "The Process of Zero", *World Policy Journal* Winter 2009-10, Vol. 26, No. 4, Pages 85-93.

Revolution in Human Affairs

CAPS-WAAS Workshop, New Delhi, February 9, 2011

While administering relief and development aid in the Far East during the early 1950s, former WAAS President and Club of Rome member Harlan Cleveland coined a new phrase to describe a striking phenomenon which he perceived would have profound impact on the future course of democracy and human development. He spoke of a *revolution of rising expectations* awakening the population of former colonial nations, releasing newfound aspirations, energy, hope and confidence among those who were previously oppressed, suppressed or simply resigned to the meager, unchanging traditional life of their forefathers. This was the subjective psychological basis for the remarkable renaissance of Asia that began with Japan, then rippled across Asia, among the Asian Tigers and more recently China and India.

Four decades later, Academy Fellow and Pugwash member Jasjit Singh perceived a related phenomenon which was as disconcerting as Cleveland's perception was inspirational. He was struck by the fact that increasing prosperity in his native India and other developing countries was associated with higher, rather than lower, levels of crime, social unrest and violence. He observed that a rapid rise in social expectations was at once the driving force for social progress as well as the source of increasing social tensions and social instability. While some sections of the population were enjoying unprecedented economic opportunity and prosperity, those who remained outside the orbit of the general social progress were made increasingly aware through the spread of television, newspapers, travel and migration of the stark contrast and growing disparity between their meager existence and that of progressive classes. This led him to formulate the counter conception that when the gap between rising expectations and ground level political, social and economic opportunities becomes too large, the energies released by greater awareness may turn into frustration, disenchantment, social unrest and even terrorism. This thesis was set forth in a report of the International Commission on Peace & Food and is elaborated in an article by Jasjit Singh in this issue of *Cadmus*.¹

These two perceptions formed the starting point for formulation of a new WAAS project which was proposed by Jasjit Singh during the strategic planning process, approved by the Board of Trustees in August 2009, and officially launched at an international workshop in New Delhi co-sponsored by the World Academy and the Centre for Air Power Strategy on February 9, 2011. This project focuses on the inextricable linkage between human development and human security and is founded on the realization that the two are complementary aspects of a common social process.

While the workshop was in session, events in Egypt dramatically demonstrated the relevance of the theme and the importance of understanding the linkage. Media reported that many of the leaders of the democratic revolution in Egypt were educated, unemployed youth who had become aware of their constitutional rights but were denied actual opportunities to exercise them. The workshop also explored manifestations of this phenomenon in countries such as India, where rising levels of urban and rural prosperity are accompanied by rising levels of organized violence among a growing Naxalite movement of impoverished tribal

communities, which is spreading rapidly from state to state.

At the same time, it was noted that the phenomenon of rising expectations is not confined to the developing world. That prompted Bob Berg to raise the question why no revolution has occurred during recent times in the USA, in spite of widening economic disparities. What are the factors that convert stratification and inequality into violence? What is the role of globalization in unleashing and directing social aspirations? Winston Nagan identified the spread of universal, secular human values as a critical factor and argued that we need better theory that will enable us to explore the multi-dimensional aspects of this phenomenon and evolve effective strategies to transform the awakened energies into constructive social progress. Discussants contrasted the paths taken by India and China; whereas in democratic India aspirations have risen more rapidly than ground reality, China has utilized social control to contain expectations while taking aggressive steps to improve actual living standards. Ivo Šlaus observed striking differences between the democratic movement of the 19th and 21st centuries. Today democracy is more centrally a social movement focused on human rights than a class political struggle to determine the form and control of government.

In future this project will examine the linkages between unemployment, social stability and social security in both developed and developing countries, a theme explored elsewhere in this issue of *Cadmus*. It will also explore the factors that are responsible for the onset of revolutionary movements in an age of global telecommunications.

Notes

1. International Commission on Peace & Food, *Uncommon Opportunities: Agenda for Peace & Global Development* (London: Zed Books, 1994), 22.

The European Leadership Network

The European Leadership Network (ELN) for Multilateral Nuclear Disarmament and Non-Proliferation is a network of senior European political, military and diplomatic figures including Des Browne, Ruud Lubbers, Lord Geoffrey Howe, Lord Robertson, and Ivo Šlaus. ELN was established in June 2010 to express concern over the world's growing nuclear dangers and to work multilaterally to have those dangers addressed. It emerged out of a partnership between the British cross-party parliamentary group, the Top Level Group of Parliamentarians for Multilateral Nuclear Disarmament and Non-Proliferation and the independent think-tank, the Royal United Services Institute for Defence and Security Studies (RUSI) in London. The goals of the network are to join up, integrate and provide a focal point for the debate on nuclear issues within Europe; increase the European voice on the full spread of nuclear issues from nuclear disarmament to non-proliferation and nuclear security; and allow groups of senior European leaders within the network to come together with each other and with others to develop ideas and proposals that can help to make the world a safer place. The third ELN conference is planned in connection with the Pugwash Annual conference in Berlin in June 2011.

Thoughts and Prayers for our Japanese Friends

From: Trustees WAAS

To: Yutaka Haruki, Hidetoshi Kato, Hiroya Kawanabe, Tae Chang Kim, Hirotoshi Komoda, Akio Morishima, Kinhide Mushakoji, Yoshihiko Nakamura, Kenneth Ruddle, Yutaka Tonooka, Kaoru Yamaguchi, Abdul Hamid Zakri

Sat, 19 Mar 2011 23:29:49 +0530

Subject: Thoughts and prayers for your safety

Dear WAAS Fellows, Dear Friends,

On behalf of the World Academy we would like to convey our condolences for the tragic loss of lives and devastating destruction caused by the earthquake and the tsunami. Our thoughts and hearts are with you. We hope you, your family and your friends are safe and all of you will overcome this calamity.

Wishing you all the best,

Sincerely yours,

Alberto Zucconi, Daniel Coates, Garry Jacobs, Ivo Slaus, Pushpa Bhargava, Ramesh Mashelkar, Robert J.Berg, Walter Truett Anderson, Winston Nagan

From: Kinhide Mushakoji

Director, Centre for Asia Pacific Partnership, Osaka University of Economics and Law

To: Trustees WAAS

March 20, 2011 8:19 AM

Dear Colleagues:

Thank you so much for your concern about us in Japan. As a dormant member of the WAAS I wish to tell you that many colleagues in the Japanese academia, especially in Sendai, have been struck by the Earthquake, Tsunami and Nuclear Meltdown. A young colleague I know well is trying to find a place to live far from the radioactively dangerous zone because of his baby son. This is only one case among so many others. I can, nevertheless assure you that the academia in Japan is resilient enough to mobilize its intellectual creativity in view of enabling Japan to build itself again from the bottom where it fell now. We will try again to develop Japan as we did after the defeat of 1945.

Respectfully yours,

Kinhide Mushakoji

From: Yoshihiko Nakamura

Professor, School of Information Science and Technology, University of Tokyo

To: Trustees WAAS

March 22, 2011 11:26 AM

Dear Colleagues,

Thank you for your thoughts and kind words to support us and people who suffered from the historical disaster in Japan.

I am extremely sad to know the number of people who were lost and the width and depth of the damaged area. The damaged area by tsunami includes those which were famous for the beauty of natural coast line and agricultural landscape, which will take many years to recover. I am also praying that the damage of our colleagues and friends if any is minimum.

I am also optimistic and expect that Japan will accelerate the change of its systems of politics, economy, environments, society, and scientific research in a way that it would have otherwise taken a long time or never happen.

Best Regards,

Yoshihiko Nakamura

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 World Academy of Art and Science: History and Manifesto

www.worldacademy.org

1. History

The idea of founding an international association for exploring major concerns of humanity in a nongovernmental context grew out of many conversations that took place among leading scientists and intellectuals in the years following World War II. Prominent among this group were people such as Albert Einstein and Robert Oppenheimer who had played a part in the development of the atomic bomb and were deeply concerned about how it and other scientific advances might be used — or misused.

This informal project took a major step forward in 1956, when a meeting — The First International Conference on Science and Human Welfare — was held in Washington, D. C. The organizers were two American scientists: Richard Montgomery Field of Princeton, who had worked for many years as chairman of an international committee on the social values of science; and John A. Fleming, former President of the International Council of Scientific Unions. At the end of the conference, participants agreed to take steps toward the formation of a World Academy, and elected an International Preparatory Committee for that purpose. Its members were: (from France) Pierre Chouard, George Laclavère and G. Le Lionnaise; (from the United Kingdom) Ritchie Calder, H. Munro Fox and Joseph Needham; and (from the United States) Robert Oppenheimer.

The Academy was formally founded (and its first officers elected) in 1960. They were: as President, Lord John Boyd Orr of Scotland; as Vice Presidents, Hermann Joseph Muller of the United States and Hugo Ostwald of Sweden; and, as Secretary General, Hugo Boyko of Israel. They published the following statement:

2. Manifesto, in the Name of Science and the Future of Mankind

The appeal of the International Conference on Science and Human Welfare has been realized — THE WORLD ACADEMY OF ART AND SCIENCE has been established.

This urgently needed forum has been created for distinguished scientists and scholars to discuss the vital problems of mankind, independent of political boundaries or limits — whether spiritual or physical; a forum where these problems will be discussed objectively, scientifically, globally and free from vested interested or regional attachments.

The basic idea which led to the founding of the Academy stems from the following considerations:

- All existing international organizations which decide on vital problems of mankind are constructed on the principle of national or group representation.
- This forum is international, or more truly trans-national.
- From the dawn of mankind people have worked together to build the tower of knowledge,

and no nation has failed to contribute to this marvelous building. The creative power of the human spirit is to be found in the first prehistoric digging stick for agriculture as in the motorized plough of our time. The first canoe is no less original in concept than the Archimedian principle; the first wheel no less than the first airplane—perhaps even more so.

- The true object of all these achievements of the human spirit is to lighten the burden of life, to enrich it — and certainly not to make it more difficult or to destroy it. In the words of Einstein, who is one of the spiritual fathers of this transnational forum: “The creations of our mind shall be a blessing and not a curse to mankind.”

This is the fundamental aim of the World Academy: to rediscover the language of mutual understanding. It will work in close collaboration with the institutions of the United Nations. It will look for the true enemies of peace, and try to fight them:

These enemies are hunger and sickness, waste and destruction; the archenemies intolerance and ignorance, resignation and fear.

In international meetings and conferences, represented by group or nation, the intrinsic merits of the questions discussed have too often to be subordinated to considerations of national prestige or group interests. The World Academy has no pre-established tasks to fulfill and no vested interests to serve. It is free to attack problems in the broad interests of mankind, and to seek solutions leading to hope, happiness and peace.

With the help of science and the support of all cultural and constructive forces of mankind, the World Academy will be able to dedicate itself to its objective — the aim of serving as an impartial and nonpolitical adviser, complementing other organizations, in this difficult transition period, and contributing in leading mankind to an era of true progress, true human welfare, and true happiness.

Supported by the confidence and trust of a great number of spiritual leaders of mankind, we herewith declare the World Academy of Art and Science founded.

For the Charter Members - December 24, 1960

The list of Charter Members contained the names of four Nobel Laureates (Lord Boyd Orr, Prof. Muller, Lord Russell, and Prof. Urey) as well as those of several men who had played leading roles in shaping the major postwar international organizations: Prof. Needham had been a co-founder of UNESCO, Lord Boyd Orr the first Director General of the Food and Agriculture Organization (FAO), and Dr. Chisholm the first Director General of the World Health Organization (WHO).

Also mentioned were the names of four “Posthumous Charter Members” — Albert Einstein, John A. Fleming, Sir Ian Clunies Ross and Homer Le Roy Schantz — who had died before they could sign the founding manifesto.

Past Presidents:

*Lord John Boyd Orr - Hugo Boyko - Stuart Mudd - Detlev Bronk - Harold Lasswell - Walter Isard
Ronald St. John Macdonald - Carl-Göran Hedén - Harlan Cleveland - Walter Truett Anderson*

PUBLISHER



THE RISK INSTITUTE

On the basis of a voluntary network, partly supported by The Geneva Association, The Risk Institute was established in order to extend the studies on the issues of risk, vulnerability and uncertainties to the broader cultural, economic, social and political levels of modern society. It is now in the process of becoming established as a Foundation.

The starting point defining the programme of action was an informal meeting held in Paris in 1986. Among the participants were Raymond Barre, Fabio Padoa, Richard Piani, Edward Ploman, Alvin and Heidi Toffler and Orio Giarini.

A first report, by Orio Giarini and Walter Stahel, was published in 1989, reprinted in 1991 and revised in 1993, with the title *The Limits to Certainty — Managing Risks in the Modern Service Economy* (Kluwer Academic Publishers, Dordrecht, The Netherlands), with an introduction by Nobel Laureate Ilya Prigogine. It was also published in French, Italian, Romanian and Japanese. A completely new German version was published in 2000 with the title *Die Performance Gesellschaft* (Metropolis-Verlag, Marburg).

The book stresses the point that uncertainty is not just simply the result of inadequate or insufficient information. Every action extending into the future is by definition uncertain to varying degrees. Every ‘perfect system’ (or ideology) is a utopia, often a dangerous one: the total elimination of uncertainty in human societies implies the elimination of freedom. Learning and life are about the ability and capacity to cope, manage, face, contain and take advantage of risk and uncertainty.

In 2002, The Risk Institute published with Economica (Paris) the book *Itinéraire vers la retraite à 80 ans*. Ever since the The Risk Institute has been mainly concerned with a research programme on social and economic issues deriving from extending human life expectancy (usually and wrongly defined as the ‘ageing’ society), which is considered the most relevant social phenomenon of our times. This is particularly relevant in the context of the new service economy. The Risk Institute has contributed to the organisation of the conference on “Health, Ageing and Work” held in Trieste and Duino on 21-23 October 2004. Followed by a second conference on similar issues, in Turin, October 2007. On this basis, it has taken the initiative to publish from 2005 the EUROPEAN PAPERS ON THE THE NEW WELFARE — The Counter-Ageing Society, in two versions (one in English and one in Italian), both freely available on www.newwelfare.org.

In 2010 the Institute has published in Italian “*Itinerario senza frontiere: dal Texas alla terza età*”. Further more it is now editing the CADMUS Papers.

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**EUROPEAN PAPERS
ON THE NEW WELFARE**
the counter-ageing society

No. 15, October 2010

ISSN 19708947

Available on the website of the
EUROPEAN PAPERS ON THE NEW WELFARE
THE COUNTER-AGEING SOCIETY

www.newwelfare.org

ISSN 1972-4543

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- *Introduction to "The Limits to Certainty" - a report to the Club of Rome, Kluwer Academic Publishers Dordrecht - International Studies in the Service Economy*
This report is also available in French, German, Italian, Rumanian, Spanish, Japanese

DOCUMENTS

- *"The Employment Dilemma and the Future of Work", a report to the Club of Rome*
(also available in German - 2 editions -, French, Spanish - 2 editions -, Italian, Korean, Bulgarian)
- *"Notes on the Service Economy: the Context for the New Welfare", a discussion paper*
- *Abstracts from "THE LIMITS TO CERTAINTY - Facing Risks in the New Service Economy"*
(2nd edition, Kluwer Academic Publishers, Dordrecht / Boston, 1993)
- *Abstract from "DIALOGUE ON WEALTH AND WELFARE" (Pergamon Press, Oxford, 1980)*

For your library the printed version:

Information

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The Employment Dilemma and the Future of Work

Report to the Club of Rome

By Orio Giarini & Patrick M. Liedtke

Second edition • 151 pages • CHF 60

Modern societies are trying to develop concepts that allow them to protect their citizens and at the same time stay competitive in the globalised markets. The approach of the new welfare state is no longer to arrange for full coverage of (ideally) all risks but to replace the existing extraordinarily expensive systems with more targeted and efficient approaches. This is achieved through requiring people to assume more risks individually and to organise their adequate protection themselves. This so-called “risk shift from public to private”, unfortunately, has had as a consequence many half-hearted or partial reforms leading to ineffective working structures, inadequate employment arrangements, and ultimately an erosion of the protective systems rather than their real modernization.

In this report, the authors analyse work in all its forms in the modern service economy and propose several innovative solutions. Two of the most ambitious are: (1) Organising a basic layer of remunerated work for those who otherwise cannot find employment, keeping them active and engaged; and (2) the encouragement and empowerment of the elderly to stay in employment for many years beyond age 60 or 65 — not just as a simple prolongation of existing careers but at flexible terms (part-time work is the key component) that are more suitable to them.

About the Authors

Orio Giarini is Director of the Risk Institute in Geneva and Trieste, a European research institution for the new welfare society, and Editor-in-Chief of *The European Papers on the New Welfare*. He was formerly Secretary General of “The Geneva Association”, Member of the Executive Board of the Club of Rome and professor at the University of Geneva, lecturing on the new service economy.

Patrick M. Liedtke is Secretary General and Managing Director of “The Geneva Association”, leading risk and insurance research organisation supported by the CEOs of the largest insurance companies in the world. He was Member of the Executive Board of the Club of Rome, Director of ASEC (Applied Services Economic Centre), Board Member of the European Group of Risk and Insurance Economists (EGRIE), and Editor-in-Chief of *The Geneva Papers on Risk and Insurance — Issues and Practice*.

To order copies of the book, please contact:

The Geneva Association - General Secretariat

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World Federalist Manifesto by Francesco Stipo

The World Federalist Manifesto offers the reader a global and unitary vision of international organizations, giving insights on the inner mechanisms of the United Nations and a creative and constructive approach to the phenomenon of globalization. The book encompasses all social sciences, examining international issues by a technical prospective, analyzing the economic, political, financial and legal elements of globalization and offering solutions to international problems. The author focuses on the political aspects of globalization, examining the application of a confederate political model at the world level while reviewing the historical background of world federalism. The author presents a model of world confederation divided into international legislative, executive, judicial and financial branches.

WORLD FEDERALIST MANIFESTO
GUIDE TO POLITICAL GLOBALIZATION

Dr. Francesco Stipo

In his view, the world government shall share the authority with Member States, in a way that both are sovereign within their respective sphere of competence. The world confederation should reflect the political and economic balances of world nations. The book presents different means to achieve political globalization: the first, through the unification of the United Nations system by adopting a single budget, a single Assembly and voting system; the second, through the creation of a Trans Atlantic Free Trade Area, merging NAFTA with the European Union. The resulting economic organization would integrate with the military structure of NATO and develop into a North Atlantic Confederation. By attracting developing countries, it would eventually become a Union of Democratic Nations. The World Federalist Manifesto constitutes an important contribution to the progress of humanity and is directed to all the people involved in the process of globalization.

Available for purchase at <http://store.worldfederalistmanifesto.com/>

Those who are engaged in building democracy in their countries and who are animated with a fresh spirit like in Egypt will have to ask themselves: What purpose does building a democratic nation have if it is embedded into an undemocratic and non-transparent international system? In a globalized world the confinement of democratic participation of citizens to the institutions of the nation-state is almost equivalent to disenfranchisement. True democratic emancipation cannot stop at national borders.

Andreas Bummel, Chair, Committee for a Democratic UN

Politics is the whole of which economics is a part and employment is a small part of the wider domain of economic life. Ushering in a global government generates the power of solving these minor problems. Government is the context that activates the politician. Politicians can cure the ills created by economists. A wider vision of economics solves the problems created by narrow inspiration.

T. Natarajan, President, The Mother's Service Society

The role of labour is crucial for the social cohesion and stability it provides. Threats to financial stability do not exclusively emanate out of capital markets. As the unrest in several Arab countries demonstrate yet again, without social stability there can be no financial stability.

Patrick Leidtke, Director, Geneva Association

Economic thinking is still very largely related to traditional Cartesian (and Newtonian) concepts of science. The notion of equilibrium is not really a concept or an explanation, but rather a tautology, which has been given the value or status of an axiom. Understanding this notion of equilibrium, where supply is equal to demand, is essential because it explains why economic theory has from the beginning always tended to be one-sided...Once we enter real time, uncertainty and disequilibrium become the reference criteria of reality. Introducing the notion of real time into the economics of supply and demand (in modern terms, service based production and consumption) is a radical alternative to the view of the economic process as being based on timeless (instant) equilibrium.

Orio Giarini, Director, The Risk Institute

According to Roosevelt, "necessitous men are not free." The narrow conception of individual freedom founded on private property rights advocated by neoliberalism neglects a much wider, more humane conception of social democracy, freedom from want and human security affirmed by the New Deal, the Atlantic Charter and the UN Charter.

Winston Nagan, Director, Inst. for Human Rights, Peace & Development

A human-centered theory of economy and employment needs to be founded on the realization that human beings – not impersonal principles, market mechanisms, money or technology – are the driving force and central determinants of economic development.

Garry Jacobs & Ivo Šlaus, World Academy of Art & Science Global Employment Project

CADMUS

Inside This Issue

Our world is headed into a Perfect Storm of an interconnected financial, ecological and social crisis. Almost all forward-looking assessments demonstrate that business as usual and incremental improvements will not be sufficient to take us to a future world blessed by equitable prosperity, safety, security and contentment.

Ian Johnson,
Secretary General of the Club of Rome

The three organizations – WAAS, Club of Rome and the Pugwash Movement – should sincerely join forces and act together, so that we can fully utilize use our collective experience, intellectual capacity and foresight. Together, we will have a much stronger voice to get our good messages out to the world and be listened to by policy makers, parliaments, governments, academics and all societies in general, in both the industrialized and developing economies.

Heitor Gurgulino de Souza,
Former Rector of United Nations University

Decisions on our common future should no longer rest solely on world leaders, who can evade or even obstruct meaningful change. A simultaneous electronic ballot on saving bios is a brilliant opportunity to demonstrate that, as citizens of the world, we can all agree on safeguarding the Earth for the generations to come. By giving priority to individual voices to be heard, the World Referendum can elicit the personal involvement of every citizen in the race to save the environment and help to bridge the gap between the rich and poor.

Agni Vlavianos Arvanitis,
President, Biopolitics International

The greatest global challenge that faces the international community today is that of the current trans-national revolution in human affairs, which in turn is triggered by the combination of three revolutions: a revolution of rising expectations, the information and communications revolution, and a broader industrial-technological revolution.

Jasjit Singh,
Director, Centre for Air Power Strategy

Continued . . .