



PROMOTING LEADERSHIP IN THOUGHT
THAT LEADS TO ACTION

THE WEALTH OF NATIONS REVISITED

CADMUS

NEW PERSPECTIVES ON MAJOR GLOBAL ISSUES

Volume I, Issue 6

May 2013

ISSN 2038-5242

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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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Via della Torretta, 10 - 34121 Trieste - Italy / Rue le Corbusier 12, 34123 Geneva

Editorial Office: The Mother's Service Society

5, Pudukai Sivam Street, Venkata Nagar - Pondicherry 605011 - India

Published under Open Access policy guidelines.

See the last page for Editorial Policy.

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

E-mail: editor@cadmusjournal.org

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



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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.

Ivo Šlaus

Orio Giarini

Garry Jacobs

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This issue of Cadmus marks a significant shift in emphasis from analysis of problems to the search for viable comprehensive solutions. The need for a new paradigm for global development capable of addressing the pressing challenges and opportunities of the 21st century was a main conclusion of the World Academy's conference in Trieste in March 2013 and it is the central theme of WAAS conferences at Palais des Nations in Geneva and Library of Alexandria in June 2013.

The articles in this issue examine the philosophical, political, legal, economic, social, psychological, cultural and ecological dimensions of the subject. They draw on insights from the Trieste Forum to identify elements of a theoretical and practical approach to development based on the primacy of Human and Social Capital. These elements include the key role of human choice in the formation of public policy and social institutions; the central importance of universal values and human rights in development theory; the catalytic role of the individual as original thinker, entrepreneur and social innovator; the need for rectifying serious deficiencies in the functioning of democratic institutions; the psychological basis for the institution of money as a social organization; and the concept of society as a complex social network.

We hope you will enjoy this issue and contribute to the further development of a new paradigm.

Orio Giarini

Garry Jacobs

Ivo Šlaus

In Search of a New Paradigm for Global Development

Ivo Šlaus

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Garry Jacobs

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Abstract

The World Academy has recently launched an initiative to bring together like-minded organizations and individuals to examine the root causes of the multiple challenges confronting humanity today and formulate a comprehensive strategy for addressing them. Its central premise is that viable, effective solutions can be found to meet the entire spectrum of economic, ecological, political and social challenges by formulation of an integrated perspective, comprehensive strategy and detailed policy framework attuned to the realities, needs and emerging opportunities of the 21st century. This article is intended to serve as an initial discussion paper for a WAAS e-seminar, an international conference at UNO in Geneva and a workshop at the Library of Alexandria in May-June, 2013.

The world faces unprecedented challenges. Expanding opportunities are emerging side by side with intensifying problems. A proliferation of money, technology, education, trade and communication links is fueling ever more rapid global development. The growing global capacity to meet human needs has come face to face with insurmountable difficulties. Persistent poverty co-exists side by side with unprecedented prosperity. Rising levels of inequality and unemployment are spreading discontent and social unrest at a time when social welfare nets are overstrained by an aging population. Economic growth is depleting the world's natural resource base at an alarming rate, while threatening long term catastrophic changes in climate. The competition for scarce resources is aggravating nationalist competition at a time when international cooperation is essential for coping with common global challenges. Globalization is breaking down the barriers insulating national economies, making states increasingly vulnerable to destabilizing impacts from beyond national borders. Proliferation of nuclear and other weapons poses new threats to national and regional security. Humanity seems driven by mutually exclusive, contradictory goals leading to apparently insoluble problems.

These multiple challenges share common attributes: They all transcend narrow disciplinary boundaries. They are interrelated and interdependent and defy solution by partial, sectoral approaches. They are all global in nature and cannot be fully addressed without coordinated actions by the international community. Approaches to resolving these challenges

are subject to conflicting claims, priorities and interests. Viewed as a whole and in relation to one another, they present to humanity a nexus of interconnected problems of unparalleled complexity.

1. Quest for New Paradigm

Each of these global issues is a subject of on-going analysis by leading organizations around the world. Many strategies have been formulated and projected for dealing with each of them individually in a piecemeal manner, often at the expense of the others. Solutions to ecological problems usually involve economic tradeoffs that neglect the irrepressible rising aspirations and expectations of developing societies and are also unacceptable to most prosperous nations. Efforts to balance budget deficits and control inflation appear to be in conflict with efforts to stimulate growth and generate sufficient employment opportunities for all job seekers. Investments in security typically neglect the destabilizing impact of rising levels of unemployment and inequality on social stability. Managing ever growing global financial flows, arms trade and other essential aspects of global rule of law is undermined by the reluctance of national governments to cede authority to international institutions.

"Is there any way in which apparently mutually contradictory goals of prosperity, security, sustainability and social justice can all be realized? If so, what is lacking?"

The lack of significant progress on addressing these issues in recent years has seriously raised doubts about the collective capacity of the human community to effectively address them. There is presently no consensus as to whether real, effective solutions are possible to meet the full spectrum of global challenges and what those solutions should be. *Is there any way in which apparently mutually contradictory goals of prosperity, security, sustainability and social justice can all be realized? If so, what is lacking?*

Frustrated idealists and cynical pragmatists frequently cite absence of leadership, vested interests, conspiracies of the rich and powerful, and lack of political will among the principal obstacles to coherent policy and effective action. But the skepticism, cynicism and failure to act have deeper intellectual roots. Current thinking on these issues has failed to present a clear alternative to addressing the totality of the challenges and their complex interrelationships. The public has yet to be convinced that there are viable solutions that do not involve unacceptable sacrifices. Decision-makers are yet to be convinced that there is a comprehensive policy framework that can be instituted within a democratic context. Some believe the only solution is to wait until a natural catastrophe or social revolution compels leaders to desperate measures.

"Prevailing theory and conventional wisdom stand in direct opposition to effective action."

The root cause of the current paralysis lies in the fundamental conceptions and perceptions which govern global society today. Prevailing theory and conventional wisdom stand in

direct opposition to effective action. Outmoded economic dogma is used to support unbridled financial speculation, unsustainable depletion of resources and growing inequalities. Concepts of competitive security and balance of power are used to justify the prevailing security environment. An international legal system predicated on a dated conception of national sovereignty is applied to sustain an undemocratic system of global governance. Without challenging these conceptions, solutions will continue to evade us.

2. Historical Precedents

History offers precedents for radical change. Usually, it occurs in the form of violent revolution in the face of intractable vested interests that resist dilution of their power. Occasionally, it has been ushered in by far-sighted leaders who recognized the urgent need for rapid social evolution to preempt the possibility of violent revolution. England sought to avoid a repetition of the bloodshed that wiped out the French aristocracy by opening up to the prospering middle class a greater share of political power and social respectability. Abraham Lincoln led a silent social revolution during the closing days of the Civil War when he delayed the armistice while exerting every power at his disposal to compel a reluctant Congress to adopt the 13th Amendment abolishing slavery. Had he not done so, the return of the southern states to participate in the government might have postponed the emancipation of the blacks by half a century or more. Britain once again avoided revolution when it became the first of the imperial powers to systematically dismantle its global empire with the granting of independence to India in 1947, which was quickly followed by freedom for more than 50 other subject nations, representing about one-third of the entire human race.

"Both the compulsions of eminent danger and the prospects for unprecedented progress constitute powerful incentives and enabling conditions for unparalleled actions with potentially momentous consequences."

After fighting two horrendous world wars, the great powers felt compelled to take unprecedented steps to found the UNO as a buttress against the prospect of an annihilating conflagration between nuclear superpowers. Since then, major conflict has been largely transferred from the battle field to the conference table. Similarly, after centuries of incessant warfare, perennially warring European powers took the first step toward founding a new European Union that has come to make war in Europe unthinkable. In an unprecedented action, Gorbachev dissolved the Soviet Empire as well as the authoritarian power structure of the USSR from within, ending the Cold War and dissolving the barriers between the East and West in the process. The combination of these three evolutionary changes has been remarkable. Between 1950 and 2010, annual war casualties are estimated to have dropped from 500,000 to 30,000 annually.¹ Since 1988 high intensity wars that kill at least 1000 people a year have declined by 78%.²

Another US President, Franklin Roosevelt, performed a similar deed in the wake of the US banking panic of 1932 when he pushed through a radical reform of the banking system, erecting the safeguards that protected the economy from a single banking crisis for more than

seven decades. Crisis returned only when the wall of protection he erected was dismantled under pressure from aggressive banks eager to exploit the opportunities of globalization free from the restraining influence of regulation and even commonsense. It was almost unthinkable at that time to imagine that the world's leading proponent of free enterprise should introduce radical socialist policies. Yet during the following two years, FDR pushed even further by ushering in the New Deal, a radical reformulation of public policy to promote social security in a country previously resistant to all government-sponsored welfare measures. Had he not died prematurely before the end of the war, he would have capped his revolutionary program with a new bill of economic rights, which included the right to employment.

"The current paradigm is based on outdated and naïve economic theories and assumptions, such as the infallibility of free enterprise, which ignores the obvious fact that unregulated markets, like other networks, are neither free nor fair, for they invariably become skewed in favor of the early adapter or the most powerful."

The challenges confronting humanity today are as formidable and threatening as any or all of these earlier challenges combined. At the same time the opportunities available to humanity to meet the needs of all human beings have never been greater. Both the compulsions of eminent danger and the prospects for unprecedented progress constitute powerful incentives and enabling conditions for unparalleled actions with potentially momentous consequences.

3. Characteristics of the Existing Paradigm

Ideas and values underlie all our thought and action. The world we know today is a natural consequence of ideas and values formulated in the past, adopted over time and still prevalent in spite of increasing challenges to their validity, fairness and relevance. The existing paradigm of global development is based on a set of spurious assumptions, premises and principles which may have had some utility in the past but now represent serious impediments to global social, economic and political progress. There are numerous reasons why the present paradigm fails to provide optimal solutions.

The current paradigm is based on outdated and naïve economic theories and assumptions, such as the infallibility of free enterprise, which ignores the obvious fact that unregulated markets, like other networks, are neither free nor fair, for they invariably become skewed in favor of the early adapter or the most powerful. It is based on measures of economic value that consider expenditure on arms exports, war and environmental catastrophes to be of equal value to those on education, health care and human security. It is based on a narrowly defined notion of economic efficiency that completely neglects the wider efficiency of the society of which economy is but a part. A society with 20 or 50% youth unemployment does not qualify as efficient by any rational considerations, for it is a society that is squandering its most precious and perishable resource and sowing seeds for future revolution. It is based on eco-

conomic doctrines more appropriate to an industrial economy at a time when services represent three-quarters of all economic activity and more than 60% of all employment.

The current paradigm is also based on outdated concepts regarding national and global governance. In countries around the world rule by money power and plutocracy masquerades as representative democracy. It supports an undemocratic system of global power sharing established more than sixty years ago that is grossly out of tune with current day realities. It is founded on a narrow conception of national sovereignty that – regardless of the actual form of national government – subordinates the legitimate rights of individual human beings and the collective rights of the human community to that of national governments acting on behalf of special interests and power groups. It upholds the right of some nations to special privileges unmatched by any commensurate responsibilities. It sanctions the production, possession and possibly even the use of weapons that violate the humanitarian rights of all humanity and endanger the global environment.

4. Comprehensive Solutions are Possible

An impartial, open-minded assessment makes it evident that viable solutions can be formulated to address all of these challenges, but that they can only be found by looking beyond the prevailing framework of values, ideas, strategies, policies, and institutions on which current solutions are based. The global economy is capable of producing sufficient goods and services to eradicate poverty and meet the needs of all human beings. Global society possesses or can develop the capacity to provide education and adequate healthcare to all its citizens. The very fact that so many human wants remain unfulfilled while more than a billion people are in search of work reflects

the superabundance of human resources available to address unmet needs. Regulatory and technological solutions do exist to mitigate climate change and augment water resources. The world is afloat with money – more than \$200 trillion in global financial assets. If properly invested and allocated, they would be more than sufficient to generate employment opportunities and adequate incomes for all. Shifting the tax and incentive bias which favors technology-intensive capital investment to favor human-capital-intensive investments instead would radically alter global employment prospects. Pricing natural resources at their replacement cost rather than the cost of extraction could safeguard the interests of future generations while providing incentives for more efficient utilization and substitution. The eradication of war and abolition of weapons of mass destruction are an achievable goal, provided an alternative framework is established to ensure the security of all nations.

“Solutions do exist or can be formulated, provided we are willing to ask some fundamental questions that challenge prevailing dogma.”

Solutions do exist or can be formulated, provided we are willing to ask some fundamental questions that challenge prevailing dogma. To cite a single example, financial markets originally developed as an adjunct to the real economy designed to pool capital for investments that meet human needs and generate employment. Today, financial markets have become divorced from that original purpose and are left free to act in ways that directly undermine

the effective functioning of the world economy. Current policy regards the right to free speculation by the wealthy as more fundamental than the right of every human being to gainful employment and economic survival. A punitive tax on speculative financial transactions is just one of the many feasible policy measures that could redirect tens of trillions of dollars into essential investments to create sufficient jobs for youth and the elderly, rapidly raise global living standards, reduce mortality rates, spread education, replace climate disruptions with renewable energy production, extract drinking water from the oceans and thereby eliminate the underlying sources of frustration and unrest that threaten social stability.

5. Characteristics of a New Paradigm

What the world most urgently needs is fresh thinking to formulate a new intellectual paradigm with the following characteristics:

- It fully comprehends the interrelationships and interdependence of all dimensions of global society and social development.
- Its goal is to optimize human welfare and well-being for all human beings.
- It recognizes that universal human values are not merely inspiring ideals. These values are the only viable basis on which sustainable progress for humanity is achievable.
- It gives central importance to the full development and utilization of Human Capital as the driving force and Social Capital as the most essential enabling technology for rapid social evolution.

Ideas have an enormous power to change the world. The new paradigm would have to be based on a new set of ideas and new principles for their application. Foremost among them must be the central aim of ensuring security and promoting the full and equitable development of all human beings. Society is an organization, an advanced network, with unlimited power to promote human welfare. To be effective it must effectively reconcile the values of freedom and equality, the rights of the individual with the rights of the collective. Education needs to be recognized as the prime instrument of conscious social evolution. Therefore, highest priority must be placed on raising levels of education globally to the highest possible level. Development is the result of social, political and legal processes. It cannot be achieved simply by more economic growth or by adoption of ever new technologies, while ignoring the need for wider social and political changes.

With regard to economy, the new paradigm must be based on the realization that money, markets and technology are human creations intended to serve, not dominate or enslave, humanity. It must recognize that human capital is the most precious of all resources, a resource of virtually unlimited creative potential, and give highest priority to the full development and free creative expression of human capacities. Economic value must reflect real contribution to human welfare. Economic systems must be founded on the principle that freedom and regulation go hand in hand, freedom for individual action and regulation to ensure the fairness and equity of social systems. As economy is a subset of society intended to promote social welfare, financial markets must be so regulated to support the real economy. Emplo-

ymment needs to be recognized as a fundamental right, the economic equivalent of the right to vote in democracy. The new paradigm needs to recognize that the shift from a scarcity based industrial economy to a knowledge-based service economy with untold productive power requires a reconceptualization of economic value and new measures of economic performance. It needs to understand money as a social organization that capitalizes trust capable of multiplying the prosperity of all, rather than as a scarce material resource or power to be hoarded and applied for the benefit of a few.

"Many of these ideas may appear utopian or unachievable under the present political dispensation, precisely because they touch the root causes of current problems that we have thus far been unwilling to address."

With regard to governance, international institutions need to be founded on true principles of representative democracy. The principle of sovereignty needs to be redefined to reflect the rights of the human collective to security and a fair sharing in the earth's abundant wealth. A truly cooperative global security system that enhances the security of all nations must replace the existing competitive system in which measures to enhance the security of one nation or group reduce the perceived security of all others. It must be based on the conception that law is a codification of the public conscience. International law must reflect the universal values and enlightened views of humanity rather than the negotiating power of governments. The basic premise of a global security system must be that war is illegal and must be abolished and that weapons of mass destruction are a crime against humanity.

These ideas, principles and values are intended to illustrate that solutions can be found to the entire range of challenges and opportunities presently before us. Many of these ideas may appear utopian or unachievable under the present political dispensation, precisely because they touch the root causes of current problems that we have thus far been unwilling to address. An impartial study of their implications should be sufficient to convince those with open minds that solutions are indeed possible and that implementation of a new paradigm, no matter how difficult, could quickly usher in a world far more stable, secure, prosperous and just than the world we live in today. They are intended to dispel the fatalistic notion of human helplessness and point to the deeper issues that we are compelled to address, either by an enlightened evolutionary transition now or by more violent revolutionary upheavals in the future.

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Notes

1. Kishore Mahbubani, *The Great Convergence: Asia, the West, and the logic of one world* (New York: PublicAffairs, 2013), 16.
2. Ibid, p.15.

The Demographic Revolution: Reconceptualizing Macroeconomics

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Abstract

It is important to reconsider the measurements which refer to the “Wealth of Nations” and from which the most appropriate references for better welfare policies are derived. In the present Service Economy, not all the “value added” measures indicate an increase in the level of wealth (the costs to cope with pollution for instance), whereas many developments in service functions and performances (in the case of many communication systems for instance) add to real wealth much more than the usual value added references indicate. In particular, the notion of productivity in a Service economy is much more relevant with reference to performance in time (hence in a probabilistic system) than to the production factor costs (in an equilibrium-based system). But all this is linked to progress in economics as a discipline, and to its integration with environmental issues (which also pretend to solve the problems of the “Wealth of Nations” on the basis of their “sustainability”). This will be a new era in economic development which will be beyond current extrapolations and will hope for “growth” in the traditional Industrial Revolution perspective.

The global demographic revolution is taking place in a situation of profound economic change, which requires that we consider what today constitutes “The Wealth of Nations”. This is of course a very complex matter that I have tried to deal with over the last 30 years.^{1*} Only the main points of reference are listed hereunder for the sake of discussion and further research, keeping in mind the fact that the word “sustainability” is in fact an indicator of the necessity to reconceptualize macro-economics and hence the definition and strategies for “wealth”:

- The notion of wealth is often considered similar to that of National Income, without our realizing that the first normally relates to a stock of goods and services, and the latter to a flow (of remunerated production, the “value added”). In this way, a country or town can be very “rich” by spending money on waste disposal, rebuilding houses destroyed by hurricanes or wars, cleaning water and air, but still be at the lowest level of development.
- The basic implicit assumption when the discipline of economics was first developed (by Adam Smith and followers) was that in a world of scarcity, the value added was really

* See also *The European Papers on the New Welfare*, 11 issues published since 2005 (of which 6 are in English). Content fully available at www.newwelfare.org

adding to the natural wealth. It was the successful birth of the Industrial Revolution, which also produced what we now know as “economics”. Manufacturing was the key then.

- Ever since, economic activity has been divided into three sectors (agricultural, industrial and services). This subdivision is misleading, since 80% of all jobs are in the Services sector. Services represent the major component of economic activity today, even WITHIN the industrial production (from research to waste management).
- There is no product without service and vice versa; only the relationship between the two has changed. Thanks to technology, in most cases, the production costs of tools have, in relative terms, greatly diminished and the utilisation costs – through services – have greatly increased.

“Science is a process of advancing knowledge by surpassing all our present limits, which we all know is incomplete.”

- We would like to stress the point that the notion of value itself depends on a chain of “productions” which starts with R&D, well before any “manufacturing process” begins, and depends on the ability to manage a portfolio of research possibilities – hence a first form of risk management. The manufacturing phase itself is based on a majority of service functions (planning, quality control, safety control, storage, distribution, financing etc.). Then the product and related services go through a period of utilisation (which is the real value added) based on the management of two uncertainties: the length of time of utilisation, the costs of repair, accidents and maintenance. At the end, there is the cost of waste disposal (with only a part going for recycling). All this is a process based on variable periods of time, where the notions of vulnerability and risk management are fundamental.
- The traditional notion of value is based on the costs (remuneration) of the factors of (industrial) production: the prize is given at a moment in time – crossing the demand curve. This “equilibrium” system is assumed as a theoretical basis for a system which aims at defining or achieving certainty (a kind of tautology). Incomplete information of various kinds is referred to as the reason why in practice there are always margins which make it impossible to achieve a “perfect” system. Some economists still believe that with time, “scientific” advance will reduce this “incomplete” information. In reality, things go the other way because value, real economic value, has to consider longer and longer periods of time, and anything in the future (especially the long term) is largely uncertain. The notion of sustainability is at the core of this issue. On the other side, many social scientists still believe that complete information is the goal of science: science, on the contrary, is a process of advancing knowledge by surpassing all our present limits, which we all know is incomplete. Pascal once said, *knowledge is like a ball in a universe*

of ignorance and the more you expand this ball, the more you get in touch with a larger number of unknown realities.

"Both economists and ecologists should overcome the segmentation of their discipline."

- There is therefore something very profound in the logic where the notion of value in a "service based economy" as an indicator of increased wealth has shifted from the cultural premises of the industrial revolution (the costs of the production factors) to the utilisation of products and systems in a time frame (which is in fact probabilistic). It is also very important to understand that "utilisation" does not mean "use" (in the ancient economic meaning, equal to destination in use), but the period when there is a positive performance producing "benefits" (real, positive value). In this way, waste (and more generally, the environmental or ecological investment) is integrated with "costs". There is no longer any contradiction between wealth and value.
- Measuring real economic value today requires that we take into account added values which add to wealth, "deducted values" which represent costs to re-establish the destroyed capacity of available resources to produce wealth (e.g. depolluting water), human capital (the stock of knowledge and capabilities available, only partly quantifiable in monetary terms), the environmental capital (also only partly quantifiable in monetary terms). In other words, the definition and quantification of the "Wealth of Nations" require the combination of monetary and non-monetary indicators, positive contributions to human welfare.
- The utilisation and diffusion of money must of course be considered as extremely important, although human nature has a tendency to misuse major inventions (like fire, the knife or the control of the atom).
- Economics should better evaluate the transition from the non-monetarized systems to the monetarized ones, keeping in mind the complementary contribution of non-remunerated activities to wealth and in general to society. Scarcity sometimes is a consequence of human activity (in this case monetarized activities indicate the increase of poverty) and not simply in a natural situation (when the monetarized activities indicate the fight for wealth against poverty). We would also not dismiss the idea that technology might in some cases become so efficient as to make some products/services totally free.
- Economics sometimes (Samuelson, the Chicago school) also indicates that the discipline is also concerned with activities which do not imply the actual use of money: but this refers only to situations where there is an exchange (where in fact money, even if not expressed as such, is an implicit reference). In fact, a large part of wealth can hardly be referred to any exchange system (the value of the oceans, of forests, of the earth's endowment): only small, partial activities can be and are "monetarized" (mining, logging, tourism etc.), not the whole system. But it is the integration of the whole system which provides the "Wealth of Nations", extending classical and neoclassical economics well beyond the present frontiers to include all relevant contributing factors to our wealth, at

a time when the Industrial Revolution has given place to the Service Economy.

- In this economy, deterministic thinking linked to notions like the equilibrium of supply and demand curves opens the way to a non-deterministic philosophy and culture, where the issue of managing risks and uncertainty is at the center of the picture to provide economic (probable) value to the future.
- The notion of “sustainability” is in fact an indicator of the necessity for “industrial” economics to make a substantial step to better understand how to increase the wealth of nations. In this perspective, middle and long term issues (“sustainable”) linked to the future inevitably require an analysis based on uncertainty and risk management.
- Both economists and ecologists (and other connected areas), taking example from the type of questions Adam Smith and his followers were after, should overcome the segmentation of their discipline. They would gain credibility. The famous report to the Club of Rome on *The Limits to Growth*, which opened the discussion on many of the issues mentioned here, made it clear that the future of the “Wealth of Nations” cannot be envisaged as a simple extrapolation of the old, traditional Industrial Revolution. Even if industrial (manufacturing) production will remain important (but overwhelmed by services in different forms, the best “industries” use and develop the best services), it is about the development and extension of the Wealth of Nations around the globe that we are concerned. The main limits are in a conceptual mindframe, which we should try to open up.
- Sustainable development has therefore essentially to do with a reconceptualisation of macro-economics. And it is within this context that the ongoing demographic revolution should be considered, as it represents probably the most challenging social issue for our world in the immediate decades ahead. This increasing human capital, in terms of quality, quantity and the extension of the life cycle provides the raw material for one of the greatest challenges in human history.

“Sustainable development has essentially to do with a reconceptualisation of macro-economics.”

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Notes

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Networks: Innovation, Growth and Sustainable Development

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Abstract

The emergence of the Internet as a measureable manifestation of our social and economic relationships changed the domination of networks in our lives. From about 2000, the internet has allowed us to study and understand the type of networks in which we live, and to model their behaviour. The Internet has fundamentally changed the distribution of wealth. The rich became richer simply because of the larger scale of the trading network and stretched national wealth distributions. Network effects are therefore likely to be responsible for much of the perceived increases in inequalities in the last 20-30 years, and policies to tackle poverty must therefore address the extent to which the poor can engage with society's networks of wealth creation. The greatest challenge to continued growth and prosperity, and therefore to peace and justice, is climate change. The potential cost of inaction on climate change could be as high. Our self-organising social networks have structured our societies and economies, and are now reflected in our technology networks. We can now replicate their evolution in computer simulations and can therefore better assess how to deal with the greatest challenges facing us in the next few decades.

Networks dominate our lives. They dominate our economic and social behaviour, yet until the last few decades we knew little about how they behave and grow.

This changed with the emergence of the Internet, not just as a communications tool, but as a measureable manifestation of our social and economic relationships. From about 2000, the internet has allowed us to study and understand the types of networks in which we live, and to model their behaviour.

These insights have since been transferred across to economics, ecology and biology, providing new insights into the nature of evolution in all areas. There have been numerous valuable successes and these have raised expectations that the science and modelling of networks can make a major contribution to economic policies, sustainable development and medicine. The application that has raised most expectation is in economics. However, there are limits to what can be done. From my experience in the last few decades, let me summarise what we now know, and what we can and can't do.

1. Self-Organising Networks

There is now no doubt that social and economic systems have most of the characteristics of one of the four types of self-organising networks: scale-free, “small-world” networks. It is worth reminding ourselves what these characteristics are: A power-law (n^x) relationship between nodes (people, businesses etc) and the number of links between them, and a power-law distribution of other key parameters (wealth, influence, and also fluctuations around dynamic equilibria etc.). Such networks emerge naturally in nature and society, and give rise to the dominance of “hubs” – key individuals and businesses; to the inequalities we know so well as Pareto’s 80/20 rule; to “non-linear” responses to change, and to the fluctuations we see in equity markets.

“Computer simulations can never reflect the full complexity of human behaviour and interactions.”

The dynamics of such networks can also now be well modelled. They emerge naturally as a result of simple rules of “preferential attachment” to more connected nodes and are robust to disruption (which is why the Internet was designed this way), and therefore also to deliberate change by policy intervention. Their evolution is also “path-dependent”, so the effect of a policy intervention depends on the starting point and previous history. They are in continuous evolution, don’t have static equilibria, and are susceptible to “boom and bust cycles”.

2. The Challenge to Economic Analysis and Projection

The economic models used by all main-stream economic institutions are still “dynamic stochastic general equilibrium” models. However, the recognition that our economic and social systems are complex dynamic networks requires new modelling approaches, notably “agent-based” modelling, that explicitly recognise the interconnectedness of different agents (people, businesses and parameters). These models can replicate and “explain” many of the characteristics of our economic systems. However, economic and social change can only be studied by letting computer simulations of the interplay of complex interactions “play out”, and computer simulations can never reflect the full complexity of human behaviour and interactions. We will therefore need to continue to use a combination of General Equilibrium models for short-term steering of our economic systems, and “agent-based” network models for more long-term analysis of growth, innovation and sustainable development.

3. Boom and Bust in Networks

A first useful insight emerged very quickly with the boom and bust of “Internet-related” companies in the period 1998-2003. PC-based dial-up access to the Internet and GSM mobile telephony are both classic “network” technologies; the value depends on the square of the number of users.* Growth is therefore initially hyperbolic: It follows Metcalfe’s law (faster than exponential), but then slows as the utility of additional links and participants diminishes. All growth patterns are self-limiting; network growth also slows and eventually saturates,

* The value of a network is related to the number of participants and number of others they can connect to: the square of the number of participants.

as in the case of the penetration of GSM telephony and PC-internet use, and now seen in social networks such as Facebook. Equity value of Internet and GSM-related companies which had been grossly inflated by extrapolations of ever-faster “exponential growth” collapsed as the growth-rates slowed. A simple model of self-limiting hyperbolic growth well reflected the evolution of technology use, with growth rates following its first differential and equity-values, the second differential. A more complex but analogous pattern underlies the current economic crisis, with its origins in the business, banking and government networks which followed an unsustainable enthusiasm for debt-financed investment.

“Smaller national and regional trading networks have a much smaller range of wealth, so globalisation has made the rich richer simply because of the larger scale of the trading network.”

4. Growth, Equity and Poverty

The growth of scale-free complex networks generates inequalities in most of their key parameters. In the internet, this is seen most notably in the number of links per node and the number of visitors per website. These follow “power-law” distributions with large numbers of nodes with few links and a few with many, much like the distribution of wealth in a population. Globalisation fundamentally changed the scale of networks in which we live – more, and more varied contacts, both socially and in trade. The Internet added and complemented this by fundamentally broadening and speeding-up our networks. These changes naturally change the distribution of wealth: Smaller national and regional trading networks have a much smaller range of wealth, so globalisation has made the rich richer simply because of the larger scale of the trading network. In addition, the rich end of the global wealth distribution exists in most countries and stretches national wealth distributions. Faster and wider trading on the Internet opens new opportunities and makes a few people richer faster, and may even increase inequalities, but is unlikely to change the poverty of billions, and puts new downward pressure on the wages of the least skilled in the USA and the EU. Network effects are therefore likely to be responsible for much of the perceived increases in inequalities in the last 20-30 years: Policies to tackle poverty must therefore address the extent to which the poor can engage with society’s networks of wealth creation.

Despite a higher probability of large fluctuations than would traditionally be expected (in equity and bond markets), complex networks are fundamentally robust, and their long-term behaviour is therefore relatively predictable. Assessments of probable world growth and prosperity to 2050 by the OECD and the International Futures system, both using “agent-based” simulations, are very similar. Individual countries and regions go through crises, but overall changes in key global parameters such as employment rates, GDP and energy-use are projected to grow continuously over the next 40 years, as they have over the past 40 years: World GDP could be 4-times larger by 2050, but with major increases in Green House Gases concentrations and losses in bio-diversity.

However, the long-term resilience and adaptability pose new challenges to policies for sustainable growth. Because of the interconnectedness of so many parameters, no single policy measure (such as shifts in government expenditure) has a direct and linear impact on outcomes: The system adapts, sometimes in ways that were not intended. It is resilient to change. This makes “impact assessments” of single policy initiatives ineffective, and makes “cost-benefit” analysis a poor basis on which to base policy choices. Only complementary portfolios of policy measures can have significant impact, as we had shown in 2005 with the International Futures simulations. Greater investment in education, innovation, non-fossil energy and social equity could all contribute to greater and more widely-shared prosperity in 2050. A combination of increased investment in research and innovation, notably in “networking technologies”; education, health-care, and non-fossil energies, could significantly improve prosperity, equity and governance by 2050. The most effective long-term policies build around a small number of dominant drivers of change, and complement them with flanking policies to enhance adaptation.

Other policies must now focus on the intensity of links: the connectedness of people and businesses: Trade liberalisation widens and strengthens collaborations and trade, but must be accompanied by coherent regulations – banking rules, labour laws, product-safety specifications etc. The value of such approaches has been demonstrated by the increased connectivity of the European research community as a result of collaborations through EU research programmes. Not only has this reduced the fragmentation of research in the EU, but even small universities now have close links to the world’s best researchers. This widens the range of new ideas that can be exploited, increases the number of skilled people that can contribute to leading-edge innovations, and helps provide a critical mass of new investment to take ideas to marketable services.

5. Climate Change: a Game-Changing Threat, but with Network Solutions

The greatest challenge to continued growth and prosperity, and therefore to peace and justice, is climate change: Climate change is already beginning to disrupt regional climate systems and has increased the frequency of disruptive extremes. If these changes continue, large numbers of people will be displaced and large costs of protection and recovery will be imposed on the society. We are heading in this direction.¹ The most recent assessments from the OECD indicate that, with current policies, world energy demand in 2050 will be 80% higher, with still 85% supplied from fossil fuels.² This would lead to a 50% increase in greenhouse gas (GHG) emissions, with CO₂ concentrations reaching 650ppm by 2050, and global average temperature rising by 3-6 degrees C by 2100,* and worsening air pollution. The OECD report recommends environmental taxes and emissions trading; valuing and pricing natural assets and ecosystem services; removing environmentally harmful subsidies (to fossil fuels or wasteful irrigation schemes), and encouraging green innovation.

Assessments of policy options with the International Futures system in 2005³ showed that a broader combination of increased investment in research and innovation, notably in “networking technologies”; education, health-care, non-fossil energies together with a global

* The UK Royal Society estimated in 2011 that with 4 degrees warming, half the world’s current agricultural land would become unusable, sea levels would rise by up to two metres, and around 40% of the world’s species would become extinct.

carbon-emission price, would be needed to stabilise CO₂ concentrations (at about 500ppm) by 2050. However, these measures would have to be implemented by most major countries: Action by the EU alone would have little effect.

More recent assessments with the International Futures system for the European Commission* indicate that a combination of accelerated deployment of “network innovations” (broadband communications and smart-grids), together with a global market price for carbon-emissions, could cut global emissions after 2025 and stabilise CO₂ concentrations (again about 500ppm) by 2050. The OECD assessment indicates that global carbon pricing could be sufficient to lower GHG emissions by nearly 70% in 2050 compared to the baseline scenario and limit GHG concentrations to 450ppm, and would slow economic growth by only 0.2 percentage points per year on average.

The potential cost of inaction on climate change could be as high. The recent assessments of the changes in probability of extreme weather by Jim Hansen show the magnitude of change already experienced. If change continues at the same pace over the next 20 years, extreme weather events will impose a major burden on growth and prosperity by 2030. The assessment by Stern in 2008 indicated the cost could be 5-20% of future GDP. More recently, the OECD estimated that the cost could be 14% of average world consumption per capita by 2050. The “World in 2052” assessment by Jørgen Randers of the Club of Rome, published in 2012, estimates that the world could be 40% less prosperous in 2052 than the simultaneous OECD assessment, largely because of assumed lower population growth and the costs of adaptation to and damage from extreme weather.

So far, most government policies, to slow the growth in greenhouse gas emissions at the national, regional (EU) and world levels, have been too narrowly-based and relatively ineffective. The EU Emissions Trading System is close to collapse from over-generous emission allocations and fraud. In addition, we are now past the time when gradual reduction in emissions can alone keep temperature rises within 2 degrees C. We may soon be in the situation where we need to draw-down GHG concentrations to stabilise the climate. What can we then do to improve the effectiveness of public policies to mitigate climate change? And how do our insights into networks and innovation help?

Sensitivity analyses using the International Futures and OECD systems have shown that the three key drivers of change to economic growth consistent with climate stabilisation are 1) a robust carbon-emission price converging to the cost of capture and sequestration, 2) low-carbon energy networks that can accommodate a variety of variable energy sources and assure reliable and affordable energy for all, and 3) accelerated deployment of innovations such as high-speed communications to most people and businesses to enable structural change in products, services and lifestyles. Infrastructures are the key to effective networks, and the key infrastructures for low-carbon prosperity are:

- A coherent and robust world “carbon-accounting infrastructure” of monitoring, reporting, labelling and trade, with credits for certified sequestrations, tradable

* Using state-of-the-art models and tools for the assessment of ICT impacts on growth and competitiveness in a low-carbon economy: DG-Information Society, November 2009.

against emissions, with market access by billions of land-users and enterprises. This market must be transparent to investors, companies, governments and individual consumers.

- “Smart grids” for electrical power distribution, with real-time pricing to consumers; and
- High-speed social and business connectivity everywhere, affordable for everyone (mobile and fibre access)

The former could build on the agreements brokered by the World Business Council for Sustainable Development and the Carbon Disclosure project of Institutional Investors. The latter can be rolled out on the basis of the 4th Generation of mobile radio-based systems and fibre in most of the developed world by 2015, and could be affordable for over half of the world’s population by 2020.

6. Concluding Remarks

Our self-organising social networks have structured our societies and economies, and are now reflected in our technology networks. We can now replicate their evolution in computer simulations and can therefore better assess how to deal with the greatest challenges facing us in the next few decades.

Climate change cannot be allowed to run out of control. Its effects will de-stabilise societies and impose huge costs on our economies. Assessments of the effectiveness of policy options to 2050 indicate that a broadly based portfolio of policy changes will be needed, built around a robust pricing of carbon-emissions engaging most businesses and people in the developed and developing world in a new network of carbon trading, with the price eventually set by the cost of capture and sequestration.

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Notes

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Human Centered Development Perspective: Insights from Trieste

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The Trieste Forum in March 2013 marked a significant milestone in the effort of the World Academy to evolve a comprehensive, integrated, trans-disciplinary perspective for addressing global challenges. An initial presentation on the physics of Dark Matter aptly illustrated the need for new thinking in the social sciences. If the most mathematically rigorous of physical sciences is compelled to postulate the existence of an unknown, invisible substance and energy representing 96% of the total matter and energy in the universe, how much more true is it that the fundamental factors responsible for the development of society are subtle, imperceptible to the senses and beyond comprehension by the present concepts of social science. In comparison to Dark Energy and Matter, the magnitude and complexity of Human Capital might well be likened to an infinite number of parallel universes (multiverse).

There was a time not long ago when human labor was valued primarily as a factor of production measurable in horsepower equivalents and substitutable by machinery. Today our conception of the human resource is far more sophisticated. Like visible matter, the physical dimension of human capital referred to as labor is only the tip of the iceberg. Our modern economic system is predicated on the principle that human beings can express their full potential only in an atmosphere of freedom where their energies can be fully released and channeled into productive, entrepreneurial and creative activities. Past WAAS President Harlan Cleveland coined the phrase 'revolution of rising expectations' to capture the central role played by the release of social energies in the post-war period. Unleashing the energy of human aspirations has been a principal driving force for the remarkable achievements of the past two centuries through progressively widening circles of liberalism, human rights and democratic governance.

As the discovery of fire and invention of agriculture transformed human life in the distant past, the immense intellectual creativity of the 20th century has dramatically demonstrated the transformative power of ideas to change the world. The human mind is our most powerful

and productive resource. An alliance of scientific research with technological innovation spurred the second and third industrial revolutions that have radically altered the way human beings move, communicate, work and live. Indeed, it is now evident that mind is the source of all other resources, for materials become productive resources only when human beings recognize their value and discover the means of putting them to use, as we have transformed the organic remains of earlier life forms into energy, plastics, textiles and life-saving pharmaceuticals.

Values are more subtle than ideas and even more powerful, for they constitute the foundation stones and pillars on which civilization and culture rise and determine the limits to which they can ascend. The emergence of universal human values based on freedom, equality and social justice has transformed our conceptions about humanity and our relationships to one another, making it almost unthinkable to recall that not long ago slavery, imperialism, apartheid and authoritarianism were righteously justified and flaunted before the world.

Human Capital is an infinitely complex microcosm capable of unlimited development. Social Capital constitutes a macrocosm of equally great complexity and potential. Side by side with the visible evolution of technology we have developed to liberate ourselves from the drudgery and limitations of physical labor, we have also been fashioning ever more powerful and effective social organizations to enhance our capacity for effective relationship. From the invention of language in the distant past to the founding of cities and the evolution of markets, money, modern enterprises, NGOs and international institutions, human history represents a continuous social experiment to harness the remarkable powers of social organization for human welfare. Today, the primary source of our wealth is no longer the field or the factory. It is the modern knowledge-based service economy, which is founded on human relationships and powered by sophisticated social organizations.

Indeed, human relationships have always been the primary source of wealth, for neither markets nor money would exist without them. The growing prosperity of the modern age is founded on conditions of peace, social stability and cooperative relationships between individuals, groups and nations within ever-widening, more closely integrated circles. The emergence of democratic forms of governance at the national and international level; modern systems of education, healthcare and social welfare; global networks for scientific research, communication and transportation constitute essential infrastructure for the evolution of global society.

The recent development of the Internet as the first truly global social organization has brought us full circle back to the most fundamental principle of our development – our relationships with one another. For the first time in history we have the capacity to fashion a global social network in which each individual is empowered to draw upon the resources of the entire world and also directly contribute to the enhancement of our collective social capacities. The fabric of society is an ever-expanding, continuously evolving, increasingly complex and effective social network.

“Human relationships have always been the primary source of wealth, for neither markets nor money would exist without them.”

The quest to unravel the mystery governing the relationship between the physical microcosm and macrocosm has preoccupied physics for a century since the discovery of Relativity Theory and Quantum Mechanics. So too, the quest to discover the most effective relationship between the human microcosm and macrocosm, between Human Capital and Social Capital, promises to unleash creative powers for human welfare and well-being with momentous consequences for the future of humanity.

"Humanity's destiny is a matter of choice, not material determinism."

The individual human being is the unknown link between these two universes. The individual as member of society is a product and expression of the endowments of the collective. At the same time the individual as pioneer, leader, inventor and original thinker is the catalyst for all social progress. The individual is the source of the ideas, the energy and the values that drive human progress. As Physics continues its search for an ultimate theory of the material universe, the most important quest of the social sciences must be for a greater understanding and practical knowledge of how to most effectively fashion social institutions to unleash and channel the creative powers of its individual members for the welfare and well-being of all. The knowledge most needed today is the framework for a comprehensive science of social evolution, a science founded not only on an understanding of human nature as we observe it, but also on the realization that this potential is not a fixed constant. The laws governing society are not immutable laws of nature but principles based on the values and choices we make, which are capable of unlimited development. Humanity's destiny is a matter of choice, not material determinism.

"Our system of education still largely regards human beings as vessels to be filled with information rather than living, thinking, creative human beings who must be encouraged to fully develop their talents and capacities."

The world is in search of the social equation that provides maximum freedom for the individual to release and express his energies productively and creatively within a social organization that ensures equity and promotes the maximum welfare of all its members. Some essential elements of that ultimate social equation are already known. Freedom is essential, but freedom without regulation to ensure equitable standards of fairness and reciprocity quickly degenerates into license and self-destructive egoism. Unregulated markets lead to unsustainable levels of inequality, concentration of social power and governance by plutocracy. The challenge we face is to balance and reconcile the individual and collective dimensions of this formula.

We know also that extending basic human rights to all human beings within a framework of democracy and rule of law is an essential requirement. This includes social and economic as well as political rights. In modern society, access to employment is the economic equivalent of the right to vote in democracy. In order to develop and release the full poten-

tial of future generations, the right to employment must be guaranteed. This is an essential condition for social justice and the preservation of social stability. As Jasjit Singh reminds us in his paper “Revolution in Human Affairs: The Root of Societal Violence” published in *Cadmus* Issue 2, unfulfilled rising expectations can quickly degenerate into rising levels of frustration, social unrest and violence. Human security, human welfare and well-being go hand in hand. Democracy must also be extended from the national to the international sphere. Undemocratic institutions of global governance preserve rule by the most powerful, which is incompatible with global rule of law. Law is the codification of the public conscience. The prevailing concept of national sovereignty, which is claimed by all states regardless of their mode of domestic governance, is itself a denial of the sovereign rights of the global human collective.

Education is the most remarkable of all social institutions, for it is the instrument humanity has fashioned for conscious social evolution. Education is the means for endowing each individual member of future generations with the essential knowledge accumulated by the collective experience of countless past generations, so that the youth of tomorrow can start off and advance further from the highest point attained by humanity until today. Although quantitatively more and better education has been extended to more human beings than ever before, we are still a long way from achieving the goal of universal coverage and raising the level and quality of education from the minimum to the maximum. Moreover, our system of education still largely regards human beings as vessels to be filled with information rather than living, thinking, creative human beings who must be encouraged to fully develop their talents and capacities. Education as a social science is still in its infancy. It has achieved the capacity for mass production. It has yet to acquire the capacity for customization adapted to the unique endowments and potential of each individual. When that is achieved, the now rare geniuses in enterprise, invention, science, thought and the arts may become commonplace.

Mind is the instrument through which we seek knowledge and the characteristics of human mentality impose practical limits on our rationality and effective knowledge. Foremost among the dominant tendencies of the human mind is the propensity to divide reality into smaller and smaller components, while losing sight of the whole which is more than the sum of its parts. Finance needs to be reintegrated with economy. Markets need to subserve human welfare. The narrow boundaries of economy need to be extended to reflect continuously evolving relations with the non-monetarized sector, its fundamental dependence on law and government, the ecological continent on which it is based, and the social context in which it functions. The interdependence of money power, political power and social power must be reconciled within a single formulation.

Another prominent characteristic of our mentality is its tendency to formulate abstract words, concepts and symbols to represent reality and mistake the abstract symbol for the reality it only imperfectly represents. Like the advocates of neoliberalism, we often mistake theoretical constructs for practical truths or misapply concepts of the physical sciences to the human sciences in which conscious awareness and volition replace the automatic mechanism of physical nature. Survival of the fittest may well be the law of the jungle but cooperation for mutual benefit and dedication to higher principles and goals are the foundations of civilization and culture and those that most distinguish human beings from our animal predecessors.

Future social science must encompass all the dimensions of human life – political, economic, organizational, technological, social, psychological, cultural and ecological – as aspects of a single integral reality. All facets of the complex multidimensional development of human society are founded on more fundamental processes of human development. The quest of social science is not for impersonal knowledge but effective power and the only legitimate power science can seek is the power to realize the welfare and well-being of all human beings. For that it must become a purposeful and value-based body of knowledge reintegrating science with philosophy, ethics and spiritual values. Let us recall that Adam Smith was a moral philosopher in search of an effective formula to promote human welfare, not an impartial natural scientist in search of impersonal universal truth. Economic value is inseparable from human values.

Growing awareness of humanity's relationship to the environment has been a crucial turning point in our awakening to greater self-consciousness. The dream of unlimited material production and consumption confronts an impenetrable wall resulting from the depletion of precious, non-renewable material resources and the destructive impact of unbridled, wasteful human activity on the biosphere. Economic value must also reflect ecological value. So also, human security cannot be assured so long as both humanity and the ecosphere are threatened by the calamitous prospect of accidental or intentional nuclear detonations. The very existence of nuclear weapons on earth represents an existential threat to civilization.

But the really confining limits are not material or technological, but conceptual. For human ingenuity has amply demonstrated the capacity to produce more from less. The scope for further increasing the productivity of available resources is enormous. The real barriers are the limits imposed by prevailing ideas and values. We are unwitting and unknowing prisoners of our own conceptions. The greatest need of humanity today is for creative leadership in thought that challenges the conventional wisdom and dogma which often masquerade as scientific knowledge. Society as it functions today is the product of past experiences, developed power structures and vested interests which present an inertial resistance to our future evolution. The want of leadership or political will so often lamented is founded on outmoded concepts, beliefs and values waiting to be challenged, exposed and reformulated. The political will and power to abolish slavery and end colonialism had to first attack the intellectual foundations on which these archaic institutions were based. Courageous leadership in thought must precede effective leadership in action.

"Uncertainty is only another term for the Unknown or the Unknowable, which is our future destiny."

Beyond all that we know and conceptualize lies a limitless vista of uncertainty. From this domain issue ever new challenges to our knowing and our security. Uncertainty in physics is the basis for all physical systems: molecules, atoms, even nuclei, would not exist without uncertainty. The uncertainty in social systems is even greater, for the laws governing society and its development constantly evolve, whereas the laws of the physical universe have remained unchanged for billions of years. Black swans are an ineluctable characteristic of social life. In a sense, all human action is an endeavor to manage risks and conquer uncertainty by greater knowledge and more effective social organization. But it is a never

ending quest. For the very uncertainty in human systems which is the source of the ignorance and insecurity we seek to eliminate is also the source of new ideas, inspiring values, marvelous innovations, more abundant wealth and richer creative potential that are the product of evolving human consciousness. Uncertainty is only another term for the Unknown or the Unknowable, which is our future destiny. Our evolutionary conception needs also to embrace this limitless, indefinable source of human potential.

Viewed from this emerging perspective, the multiple individual lines of the World Academy's programmatic activity imaged below coalesce to form the first vague outlines of an integrated intellectual framework for understanding and addressing the opportunities and challenges facing humanity in the new century.

Figure 1: The World Academy's Programmatic Activity



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The Right to Development: Importance of Human and Social Capital as Human Rights Issues

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Abstract

One of the most far-reaching decisions of the United Nations General Assembly was the adoption of the Declaration on the Right to Development in 1986. The Declaration was adopted with an expectation of optimism about progression to a new global economic dispensation. This did not happen. However, the Declaration remains an important symbol of global expectation. Notwithstanding it is an instrument that remains contested in many global fora. To the extent that the expectations of the Declaration received modest success, it is possible to explain this by the fact that the Declaration anticipated an economic theory that had not been intellectually and scholastically developed to make it work in practical policy arenas. On the other hand, a competing theory had evolved which embodied an important level of intellectual coherence and was justified by a version of conventional economics that supported the political perspectives of the capital-intensive states and related interest groups. In this competitive universe of economic paradigms, the right to development initiative was seriously disadvantaged. However, things are changing today.

1. Introduction

In a recent volume of *Cadmus*, a publication of the South East European Division of the World Academy of Art and Science, the editors boldly called for a “Revolution in Economics.” They declare that “the discipline of economics is at a crossroads. Either it undertakes a complete re-evaluation of its fundamental postulates and a critical reassessment of their utility to solve real problems or it risks sliding further into irrelevance.” The editors believe that now is the time “for a renaissance of thinking in economics.” They maintain that “inadequate thought” leads to “failed policies.”

The central problem with the conventional wisdom of economic theory is that its 19th century roots were significantly influenced by a conception of science identified with a Newtonian universe. This approach generates an approach to economic order that is largely mechanistic having an autonomous machine-like character. This approach also serves as

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a foundation and a constraint on economic thinking. The editorial note in *Cadmus* illustrates that the conditions of economic organization have changed. Economic evolution has developed a knowledge-based service economy. Under these conditions, the central fact of economic importance is the critical value of human capital. This is a profoundly important insight for understanding economics in its relation to the social and psychological sciences, including law, and the necessity of understanding the interdisciplinary interdependence of social science, economics and law.

“The individual human being as a bearer of social and economic capital is of central importance in the development of a theory of development itself. The central place of the human being and the necessity of integrating knowledge across disciplinary lines are emerging as important elements in a revolution in economic thinking.”

It is a part of the intellectual legacy of the World Academy of Art and Science that a former President of the Academy, Harold Lasswell, also recognized the centrality of human and social capital in the social sciences and law. He spent a lifetime seeking to create a comprehensive theory for inquiry about the individual human being in the global social process. This focus on the individual as a capital resource is also an important idea behind the contemporary development of human rights perspectives and practices in global society. The right to development refines the human rights perspective by making the individual a central component of development from a human rights point of view. The individual human being as a bearer of social and economic capital is of central importance in the development of a theory of development itself. The central place of the human being and the necessity of integrating knowledge across disciplinary lines are emerging as important elements in a revolution in economic thinking.

According to the editors of *Cadmus*, “today there is an urgent need to reconnect disparate fields of thought in the social sciences-economics, politics, sociology and psychology. Unification of the social sciences and the humanities can generate precious insights into social process.” I would add the discipline of law to this process as well.

One of the great insights of President Franklin Roosevelt was his statement with regard to the crisis of the Great Depression, when he observed that this crisis was not the product of an autonomous machine. It was a crisis created by human choices and one that could be ended by human choices. This insight suggests that human choice is integral to human and social capital. Connecting the idea of human capital to human choice brings in the centrality of understanding choice in terms of decision and the architecture of decision itself. The related challenge is the direction of decision making and choice with respect to defensive human goals and values. The most defensible goal of choice and development is the common good

“Human choice is integral to human and social capital.”

of all. Human choice is implicated in the Declaration of the Right to Development and therefore expresses a challenge of new economic thinking to give decision making a central place in theory and to understand challenges of decision for giving operative effect in policy arenas for the advancement of human and social capital in global economic order.

As the editors of *Cadmus* indicate, we need a richer and more scientifically integrated understanding of a multitude of disciplines which can inform a new paradigm of revolutionary thinking in the development of a useable theory of human capital defined developmental processes. I believe that the new thinking pioneered in WAAS is one of the most challenging initiatives for grappling with a coherent and defensible economic theory to give credibility to a global right to development. In short, the context presented by the new economic thinking suggests a promising route to fully understand the problems and possibilities of an emphatic emphasis on human and social capital for triggering the dynamism of development in social process.

Here it seems to me that the model developed by former WAAS President, Harold Lasswell, may facilitate the new economic thinking processes. Lasswell developed a human centered social process description that could serve as a model for knowledge integration across disciplinary lines. Lasswell expressed this in an elegant and reasonably simple framework: Social process means social interaction at any level. Social process/interaction consists of human beings (human capital) pursuing values, through institutions based on resources. This model can be expressed with greater complexity and clarity at any level of social organization. I would suspect indeed, that it is a tool that can bridge the divide between the universe of macro-economics and the universe of micro-economics. This model, as will be shown later, is compatible with the UN Declaration of the Right to Development as well.

2. The Conceptual Challenges of the Right to Development

The conceptual basis of the international right to development is to be found in the Atlantic Charter which Roosevelt declared in the U.S. Congress in 1941. The Charter emerged as an agreement with Churchill to codify the war aims of the allies. The Charter contains the famous Four Freedoms for which the war was being waged. The Four Freedoms were a merger of Roosevelt's New Deal liberalism and Churchill's eclectic humanistic conservatism. The Four Freedoms became the war aims of the allies and the basis for a post-war form of global organization. The Four Freedoms were: the freedom from fear (security); the freedom of speech and expression (political); the freedom of conscience and belief (confessional); the freedom from want (economic and material well-being). It should be recalled parenthetically that when the UN unleashed its millennium development project it recalled that the project was intrinsically a part of the Four Freedoms articulated by Roosevelt.

The end of the war generated conditions which held an uneasy coexistence with the Four Freedoms and the UN Charter. The Red Army had largely beaten the Nazis on the continent. This represented the geographic reality of a socialistic sphere of influence. In certain economic circles this fact saw the state and its control over the means of production as representative also of the extinction of private property and correspondingly, an extinction of

human freedom. A group of individuals met in Mount Peloron and devoted their intellectual efforts to resisting state tyranny. Among the tools they used was a recasting of forms of 19th century capitalism as an intellectual barrier to the unlimited growth of state power. The consequence of the Mount Peloron initiative is a good example of the durability and power of ideas especially when coherently and elegantly expressed, as well as justified at the altar of scientific verification. The fundamental ideas had ideological traction: strong state equals weak freedom. This idea challenged Roosevelt's idea that necessitous human beings experienced diminished freedom. In this view the state was not a destroyer of freedom but an active promoter of freedom by expanding opportunity and promoting equality.

3. The UN's Decisions Relating to the Right to Development

A threshold concern with the United Nations' Declaration of the Right to Development is the challenge to give it an appropriate juridical status. Juris consults have designated the prescriptions and guidelines in these instruments as forms of international economic soft law. I suspect that the weak position that the Declaration on the Right to Development holds in global affairs is that it has been urged to be construed as a document of human rights. However, it is by no means clear that the juridical character of this instrument is obvious. Additionally, I suspect that behind the motivation for the adoption of the Declaration was that it was meant to be a directive providing normative guidance for the idea of global social justice. However, it cannot be said that at the time it was adopted, our theories of political economy, which implicate the social justice normative dimension of global political economy, had been adequately developed to provide a strong conceptual and normative foundation for the Declaration. Additionally, our theories of justice from a philosophical point of view had not evolved to provide us with an objective justification for a universal theory of global social justice universalizing the concept of human dignity.

Institutionally, the UN has taken the right to development as a serious part of its mandate. However, it cannot be said that it has established a dominant place for even the discourse about a charter-based right to development. In point of fact, the UN has strenuously pressed the right to development as an important and evolving charter-based expectation. At the same time, as the UN has pursued this track, the issue has had little traction in many of the centers and fora of global economic policy making. This would suggest that the evolving law of development carries an even softer legal pedigree than its compelling symbols might suggest. It would be appropriate to step back for a moment and trace this development to provide a better understanding of the contemporary prospects and challenges for a human rights based development today.

4. Contextual Background

An important component of the contextual background that has triggered my interest in revisiting the right to development idea, is the importance of the current global economic recession which I believe is founded and generated by a seriously flawed economic theory. That theory emerged as we said as a response to the implied threats which it saw in the

development of a theory couched in human rights terms of a general right to development. That flawed theory is today described as economic neo-liberalism.

At the end of World War II, the victorious powers represented distinguishable versions of political economy. In Eastern Europe, the Red Army, which was significantly victorious over the Nazis, established a geographical sphere of influence with the USSR as the main center of influence. In that sphere of influence the expectation of political economy was that it would be under state control. In the geographic sphere of the West, the guidelines of post-war governance were influenced by the Atlantic Charter and the war aims of the allies. Both of these emergent expectations envisioned an important role for the state in the reconstruction of Europe. These contending perspectives, however, shaped the evolution of the UN approach to the issue of the future of global political economy.

During this period an important group of center left economists and philosophers met in Switzerland and formed the Mont Pelerin Society. They saw the danger that the Soviet style state posed for human freedom, in particular its claim to the exclusive patrimony of the national economy. This approach they saw as an incipient threat to freedom on a global basis. The fundamental idea behind this was that the extinction of economic freedom represented the demise of human liberty. A central component of this emergent perspective was the role of private law institutions. This role historically had established the important technical basis for the protection of private property. Hayek, the Austrian economist, refined this idea by an ingenious merger of law (property law) and economic theory (*Law, Legislation, and Liberty*. 1973, Chicago: University of Chicago Press). The tradition of private law in both the civil and common law provided legal protections against the arbitrary taking of property.

This question of property rights, law and newer approaches to economic theory which required political interventions into traditional private law institutions, came to a head during the period of the New Deal of the Roosevelt Administration. The Supreme Court led the charge in an effort to dismantle New Deal legislation on the basis that they violated private property rights. These private property rights were justified as being beyond the reach of legislative sovereignty. Indeed, they were justified by natural law. This challenge was not so much theoretically resolved as it was resolved by changes in the composition of the court.

In 1945, the UN Charter came into force. Among its major purposes was the obligation to “achieve international cooperation in solving problems of an economic... character.” Article 55 of the text explains that the UN shall promote “higher standards of living, full employment, and conditions of economic progress and development.” In 1966, the UN adopted an important human rights treaty: The International Covenant on Economic, Social, and Cultural Rights. The Preamble to the Covenant recognizes the influence on its adoption of the Universal Declaration of Human Rights, the Atlantic Charter, including its provision for a freedom from want. Overall, the document is an early step in recognizing the right to development. It also places prime responsibility for giving force to these rights on the state. It should be noted that Articles 6 and 7 identify a right to work and the right of an opportunity to work and related work rights. Although the Covenant has a comprehensive codification of prescriptions, it does not give us any guidance that identifies a theory of development or

a global theory of political economy based on social justice goals. Indeed, I would be surprised if anyone in this ordinance could provide a citation in conventional economics that even refers to this instrument.

We must step back a moment to a period shortly before the adoption of the Economic Rights Covenant. In 1960, the UN General Assembly adopted a declaration on the granting of independence to colonial countries and people. This was a sovereignty supporting declaration. It effectually suggested that realizable developmental progress will be facilitated by the expansions in sovereign bodies politic. It also recognized that colonialism had been exploitative and an impediment to development. It therefore implied that new sovereign status would be an ideal vehicle for economic, social and cultural development.

This declaration was followed by a highly controversial sequence of General Assembly Resolutions. These were the Resolutions relating to permanent sovereignty over natural resources of 1962 and 1974. These Resolutions effectually sought to advance thinking about a state-centered right to development. They also underline the strength of sovereignty by changing the conventional international law of rules about the protection of private property in the global environment. It was around Article 4 of the 1962 Resolution that the battle lines were drawn. This Article sought to change the traditional way in which private property was protected globally. Under this Article, a sovereign state could nationalize private property for reasons of public utility. Additionally, the sovereign would only consider compensation in terms of "appropriate" standards. The prior regime required the sovereign to provide prompt, just, and adequate compensation. In effect, the control over foreign investments would be subject to sovereign economic discretion. This issue became a major matter of juridical importance which resulted in changes to the doctrines of sovereign immunity and act of state. Following on these Resolutions the UN adopted a program of action for the establishment of a new economic international order. The primary objective of this program was to improve the economic position of the new sovereign participants in global society.

This new program was suggesting that a new regime secure a higher level of international cooperation regarding economic resources and processes. The approach also saw cooperation as an important obligation on the older sovereigns. The fundamental ideas in this program were codified in the Declaration on a New Economic Order (1974). In 1975, this was followed by the adoption of a charter of Economic Rights and Duties of States. These instruments sought to both promote and prescribe a legal regime for a new international order based on the primary role of the sovereign state in the management of economic order. A decade later the complex prescriptions in the New International Economic Order (NIEO) and its state-centric orientation were merged into the 1986 Declaration on the Right to Development. The model implicit in this document seeks to strike some sort of balance between the individual social participant and the near exclusive reliance on a state centric economic paradigm. The focus on the individual is reflected in Article 1 and Article 2 (1&2). The rest of the document in all the other articles stress the state central approach to development. In Article 1, it is stated that the right to development is an inalienable human right. It also states that individuals and peoples are entitled to participate in development. This therefore means that the human rights foundation of the idea of individual and people's human capital is also

a foundation of modern human rights. This suggests that a new theory of economic thinking must account for universal human rights.

At this point, the development initiative presents a critical intellectual challenge for those who wish to give the Declaration policy relevance. Notwithstanding the reference to individuals, the Declaration has a largely macro-economic emphasis, although I have not seen a macro-economic theory based on the Declaration. However, regardless of the underdeveloped theory of macro-economics in this context, there is the ringing reference to an inalienable human right. This suggests that we are also lacking a theory of micro-economic importance. Additionally, the integration of a macro and a micro-economic perspective would seem to be a critical foundation for giving the right to development intellectual credibility and efficacy in policy arenas.

World Academy Fellows such as Orio Giarini, Ivo Šlaus, and Garry Jacobs call for a new economic theory that is relevant to our time. I would suggest that notwithstanding the imperfections in the drafting of a right to development, the right to development represents a concept that with proper clarification could enhance the kind of thinking that anticipates a new global economic paradigm. It is particularly important from a right to development point of view, to recognize that the individual participant in economic order is a capital resource and the appropriate development of this resource is the pathway to the generation of a new and sustainable economic message. Additionally, the normative constraint on how individual capital is nurtured and developed has to be guided by the normative component of human rights, which places a premium on human well being.

It is worthy to note that although the right to development has had diminished traction, the UN continues its vigorous promotion of this idea. Its recent project dealing with developmental targets for its millennium initiative is a very clear project that focuses on developing human capital via projects such as the eradication of illiteracy.

The theoretical limit implied in the right to development is that we do not have an identification of the critical stakeholders in this project. The stakeholders include a multitude of participants and theory would have to account for that. For example, the assumption that globally states largely monopolize economic activity obscures the reality of the global enterprisy private sector. That sector includes not only conventional business activities across state lines, but also the significant monopoly the private sector has on global capital and its related financial institutions.

This omission has tended to obscure the salience it has been given to neo-liberal principles of economic order. For example, the private sector was outraged over the resolution related to permanent sovereignty over natural resources. It categorically rejected the weakening of the protection of private investment property. This battle implicated the entire new international economic order paradigm. It implicated it at levels below the economic radar screen. For example, sovereignty is given operational effect in many different ways in international society. The capital export in countries worked on a restriction on the immunity of sovereigns from legal accounting when they acted in the market (restrictive theory of sovereign immunity). Another major technical doctrine that could insulate a state when it

took foreign property was the Act of State Doctrine. This Doctrine too was gradually reduced so that a state nationalizing foreign property could be challenged in foreign courts. This led to the so-called Hot Good Doctrine, which meant that if a state took foreign property, wherever that property showed up abroad it could be subject to legal proceedings, which would seize the property and litigate its title. The owners of private property investment were fighting back. In this regard it became apparent that development of any sort could not happen without foreign investment.

This meant that foreign investment could come in with terms favorable to the investor. The abuses of this newer approach to global economic relations is well documented in John Perkins' *The Confessions of an Economic Hit Man*. New state elites found that there was plenty of capital to borrow often for dubious projects and often to satisfy foreign bank accounts of the new elites. This process of neo-liberalism generated diversified forms of economic activity in which corporations could relocate to undeveloped countries and produce goods, which could be sold to the corporations' original corporate home. Outsourcing became an important tool in the exploitation of the regulatory vacuum of doing business abroad. Cheap labor, relaxed labor standards, access to developed markets, and tax avoidance schemes, all of which made doing business in an unregulated market attractive for self-interest but unattractive for the common good. The limits on this model include vast accumulated debts vested in the sovereigns, which was a further limitation and what a state centric model could do about development.

The principle behind the Declaration on the Right to Development included the idea of sharing economic and technical resources to benefit the new states.* 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.

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.

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

* Id at art. 3(3).

[†] Lawyer Roles, *supra* note 2, at 134.

of working through the development agencies of the United Nations. However, a significant policy shift had emerged in the global economy. The emergence of a coalition of economically dominant states, the Group of Eight, now approximately a group of 20, reflected this policy shift. This shift has the appearance of creating an Economic Security Council of the UN but functioning outside of the organization. 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, a 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 that the radical division between rich and poor may be a cause of radical religious activism or possibly even apocalyptic terrorism. In the next section, we try to provide some of the tools that may facilitate a revolution in economic thinking along the lines of a human right to development. We start with the importance of the global context and how that context may be realistically mapped. We borrow from the work of a former president of the World Academy, Harold Lasswell and a current Fellow of the Academy, Michael Reisman.

5. Some Suggested Elements that may go into the Formulation of a New Economic Theory of Development

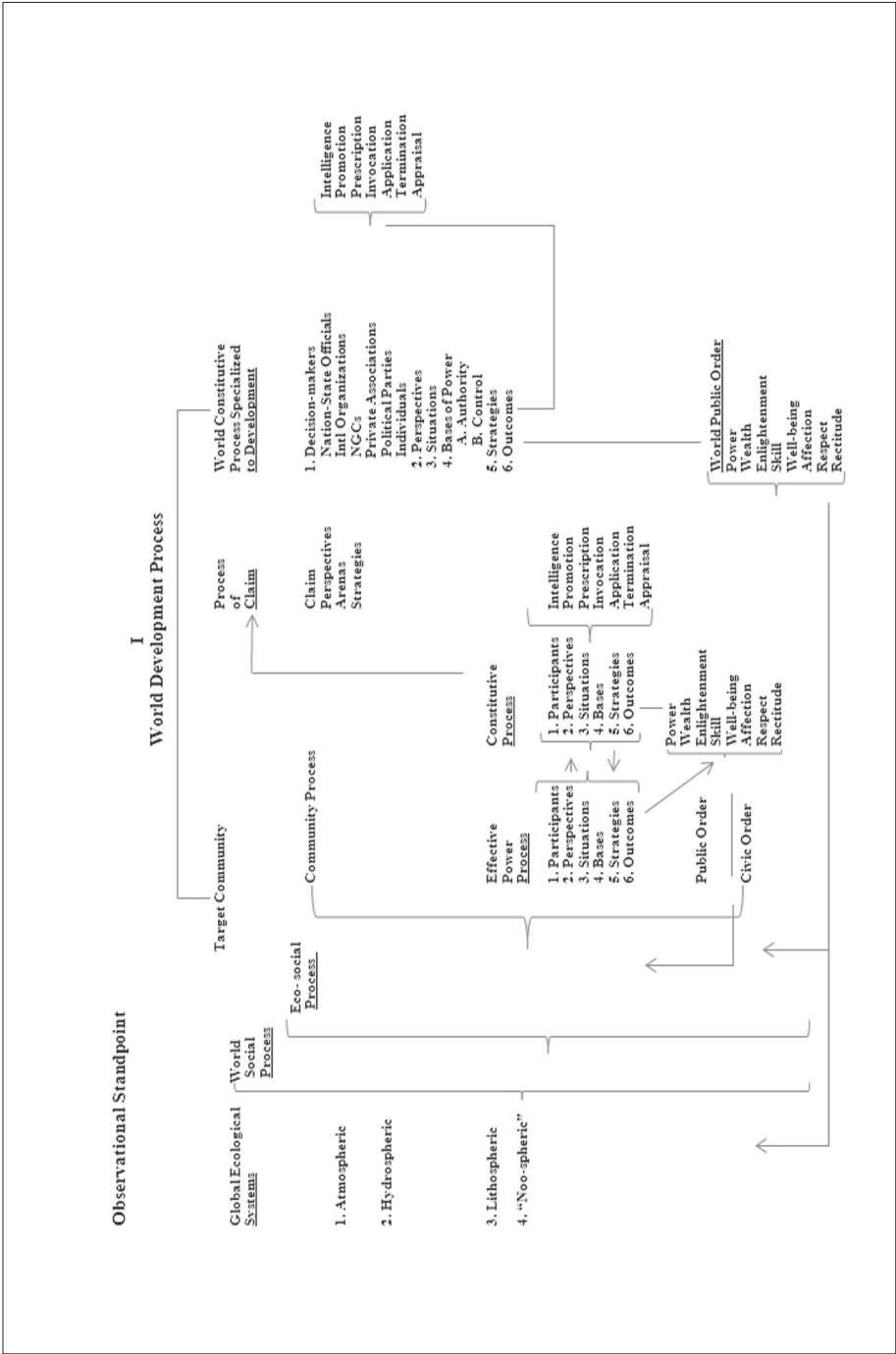
We start this section with some guidelines drawn from the Declaration on the Right to Development. Article 1 stipulates the following:

“The right to development is an inalienable human right by virtue of which every human person and all peoples are entitled to participate in, contribute to, and enjoy economic, social, cultural and political development, in which all human rights and fundamental freedoms can be fully realized.”

Article 1(2) expresses the controverted norm that the human right to development includes the exercise of an inalienable right to full sovereignty over all their natural wealth and resources. This provision provides for a more state-central development policy and application. Article 2(1) stipulates that “the human person is the central subject of development and should be the active participant and beneficiary of the right to development.” This provision moves somewhat from the state centered view. The central point is that the human person is not an object of development, but a subject of development. Seen in this light, the human person is more closely analogous to the idea of the person representing individual and social capital.

“Development must be understood in terms of all-comprehensive values implicated in human rights and not simply a single value such as wealth.”

Figure 1: World Development Process



The above quoted excerpts from the right to development assume a context from which the essential subject-generated claims for development emerge as challenges for policy, decision, prescription, application, and enforcement. This requires a realistic map of the entire global social process. Because it is from this process that the challenges relating to individual and social capital as central elements of a right to development emerge. Figure 1 is a map appropriated from the traditions of international law scholarship inspired by Fellows of the World Academy (Lasswell, McDougal, Reisman).

This chart developed by Lasswell, McDougal and WAAS Fellow Reisman is meant to provide the essential global context for a new economic theory of development. The model provides for an identification and an inter-relationship of change together with a standard which may evaluate them against the preferred objectives of a theory of development. The approach clearly demonstrates that development must be understood in terms of all-comprehensive values implicated in human rights and not simply a single value such as wealth. Fundamental to understanding the map is an effort to identify the idea that all variables are inter-stimulating each other in global society. The map helps us to generate specific targets of change recognizing their inter-dependence and inter-stimulation as factors implicating the entire context.

I. The context of ecological values. There was a time when the conventional wisdom in economics was that nature and related environmental resources were unlimited. Today, the reality of climate change challenges this earlier altruism. A new economics must consider both the potentials and the limits of the ecology of the planet. The ecology of the planet, therefore, is a crucial factor of context for a new political economy.

II. The context of global social interaction. Global social interaction involves the shaping and sharing of all values. The outcomes of this process generate the aggregate statistics of human development or the lack of human development. One of the most important problems that emerge from global social interaction are the problems of effective power and social conflict. However, the new economic theory must have a useable model of the global social process in order to fully appreciate the problems it generates on a global basis for all values.

III. The global process of effective power. The global social process reproduces the institutions and imperfections of the production and distribution of global power. It is well understood that the outcomes of global power represent conflict and competition. Additionally, the expression on global power in society is done through the process of decision-making itself. We can call this decision-making according to naked power. Since power expresses itself in terms of conflict, war and often violence, it will be obvious that peace and security are critical foundations for a social process that seeks to maximize its human capital resources. In short, war consumes human capital resources, and does not enhance or reproduce it. The new economic theory must, therefore, account for the global processes that generate and sustain human conflict, since these processes generate deficits in development.

IV. The evolution of power into behavioral constitutional processes. Conflicts about power do not always endure indefinitely. Indeed, there are periods when the power broker contestants in conflict may see that the continuance of conflict may only result in zero sum losses.

This realization may generate the elements of inter-elite collaboration from which understandings may emerge about how to manage power in ways that avoid conflict and promote collaboration. If this happens, a society may emerge with a series of understandings about how power is to be distributed, indeed allocated among the power broker contestants. This level of institutionalization of power will reflect the emergence of the power dynamics constrained by distributions which have the support of the authority of community members. When there is a form of constitutional process, we effectually have expectations about institutionalizing the forms of authorized decisions about decision-making itself. This is the foundation for the establishment of a system of public order in which all the values are distributed and produced via the authorized institutions of society. It would, therefore, be appropriate that the new economic theory develop and map the constitutive process (local to global) because it provides the framework of authorized decision-making regarding all the basic values in society including wealth. In this sense, a constitutional order that has a working capacity has an approximation to the idea of the rule of law. And the constitutive process is made operative by the constitutive functions of decision-making. Thus, constitutive decision-making may both directly and indirectly influence development and progress. Additionally, a theory of economic novelty would have to account for the decision-making functions:

“New economic theory must ensure the termination of dysfunctional traditional standards and embrace new thinking.”

1. *Intelligence* which includes gathering information relevant to making decisions and its processing, storage, retrieval, and distribution to all participators performing decision functions.
2. The decision-making function of *promotion* requires agitation and recommendation of certain policies which in the form of prescription have the quality of law. In this sense, promotion is a critical component in decision for directly changing the common interest. It is in this sense that we cannot look at economics as value-free.
3. *Prescription*. This decision function implicates the formulation and adoption of certain policies as authoritative pronouncements in appropriate sectors of the social process.
4. *Invocation*. This function of decision-making is essentially a provisional decision function that characterizes behavior as incompatible with the law and goals of the community. Those who perform the invocation function raise the question of what initiatives enhance or violate community prescriptions.
5. *Application*. This is the authoritative characterization of conduct as lawful or unlawful. To secure lawful ends, the applier must use tools of some form of sanction to secure appropriate application. In terms of the objectives of development, the consequences of development may be critically related to the actual applicative performance. The new economic initiative must, therefore, give careful attention to the idea of application if development goals are to be real.

6. Termination. The decision function of termination means the termination of something in the status quo and its replacement by something that changes the status quo. New economic theory must ensure the termination of dysfunctional traditional standards and embrace new thinking.
7. Appraisal. The theory of decision-making as applied to development requires that there be constant measures that may be appraised in terms of advancing toward progressive developmental goals and avoiding the regression to the opposite.

6. New Economic Thinking, Development and Social Change

The new economic thinking has its focus on development in terms of human capital and its potentials for improving the human prospect. It would have to identify a plurality of community systems that are inter-dependant and inter-determining and range from the local to the global. What we observe are territorial communities who know what they want and where they need to go but they lack resources and skills. An extreme example is “cargo cults”. If placed on a continuum, we may see the socio-pathological condition of hyper development. There are a multitude of problematic circumstances in between. For us to develop an approach that permits us to identify where we are and where we want to go, we would have to measure development in terms of the existent state and potentials for transformation of at least the following nine values: power, wealth, enlightenment, skill, well-being, affection, respect, rectitude and aesthetics.

1. Power: The most important expression of power as decision is the understanding of the institution within which it expresses itself. For example, globally, power is significantly decentralized. This means an economic paradigm of global salience runs into the problem of the degree of lack of institutionalization of power. It is probably true that the most power-deprived are the least well-off in global society. The new theory must be able to map global power and to appreciate its capacity to be mobilized for rational developmental objectives.
2. Wealth: In general, this refers to the aggregate volume and composition of what a society produces. It may refer to income in the community and also to the notion of an aggregate resource base. In general, when wealth is developed, the outcome is an increase in the volume and composition of products without depleting the resource base. $(P+I) \div R$
3. Enlightenment: What we mean by enlightenment is the prescription and application of education in social and economic development. The nature of enlightenment as a social capital is evident when education in a society leads to development. A society with an increased education-knowledge base uses enlightenment to extend development through informed decision-making. Decision-makers would make decisions based on informed enlightenment.
4. Well-being: Well-being including health refers to the state or condition of a society and its members. The well-being of a society is directly proportional to the level of “life

expectancy” and indirectly proportional to the expectancy of disease occurrence in that society. The optimum level of well-being, however, is dependent on other values in that society.

5. Skill: Skill is the ability to perform tasks (especially employment or professional tasks), as a function of human capital development. The skill value is for the benefit of society. Skill development is a consequence of an increase in the strength of the “skill pool” in a society where the skills are directed towards development. Skill is a critical component of individual and social capital.
6. Affection: Affection is a form of positive sentiment and underlines the loyalty of individuals and associations to the group. Being a basic value, it has tremendous social capital. The increase in scope of positive sentiments in a society increases developmental achievements and goals.
7. Respect: Showing regard for other individuals within a society is crucial to development. A lack of respect gives rise to discrimination, which in turn is a direct cause of retarded development.
8. Rectitude: Rectitude drives moral behavior in society. When rectitude of individuals within a society matches its development goals, there emerges what we call rectitude development.

These values are the critical components of the theory of a right to development. They are also implicated in the development and enhancement of human and social capital.

The system of mapping the global social, power, constitutive and public order processes represents the essential contextual background for a political economy that focuses its theoretical foundations on the development of human and social capital. Essentially, the repository of human and social capital should be focused on the value institutional context and the framework of decision making that shapes this context in ways that maximize the human and social capital capacity in society. The values approach gives us a shorthand method of understanding that human and social capital are clearly implicated in at least nine values that a cross cultural world can be observed with appropriate tools of investigation. The challenge for theory is to understand the divergent institutions respecting the cultural values and their level of efficacy in practice. We could start with the first challenge of theory which is to establish the appropriate goals of human and social capital development. Here, the challenge is to generate procedures and practices, as well as a theory to explain and justify this, which has the task of maximizing the production, distribution and sustainability of every value institutional process in order to maximize the structure, understanding and deployment of human capital.

As a consequence we want to maximize the production, distribution and sustainability of power, wealth, respect, skill, enlightenment, well being, affection, rectitude and aesthetics. In developing this framework we will be alert to the interdependence and inter-determination of functioning value systems. This means that power may be sought for its own sake but it may

also be used to maximize value shaping and sharing and sustainability with regard to every other value listed above. Wealth may be sought for its own sake but may serve as a base of power to acquire power and all other values. In short, every value may be sought for its own sake and may also serve as a base of power to shape, share and sustain every other value. This approach requires us to see economics not as a disembodied field from human relations, and if we see in the value processes the repositories of human and social capital, we bring a sense of realism required for a durable new economic theory.

It will be obvious that these value institution relationships that we identify are sought to contextualize what happens in the context of the global social, power and constitutive processes. The central feature of power and constitutive process is the centrality of decision making. We can expand this idea further by suggesting that the centrality to the development and uses of human and social capital is the capacity for the human agents of capital formation and use, to be active and important decision makers in the very processes through which human beings generate value through human capacity. I therefore suspect that the mechanistic approach to economics represents a dramatic failure in its omission to understand the role of decision as a critical component of human and social capital. I now will proceed to provide a few practical examples of these theoretical possibilities.

7. Human and Social Capital in Development: The Vicos Experiment

The Vicos Experiment was a form of intellectual inquiry that also sought to induce a form of constructive, evolutionary social change in development. The inspiration for the experiment emerged from a view that peasants were incapable of modernization. The project was led by an anthropologist, Allen Holmberg and a former president of WAAS, Harold D. Lasswell. The project was located in the Uplands of Peru and included the village of Vicos. The project leader understood that the Vicosinos were the occupiers of land owned by an absentee landlord. Their position on the land was defined as the status of serfdom. With a small grant from the Ford Foundation, Holmberg purchased the land and the hacienda and essentially became the *patrone*.

The farming practices of the village were unproductive because they had no incentive to produce crops that would be expropriated by an absentee landlord. This involved the project leaders in providing incentives to improve the village economy via farming. That also meant a movement away from near survival to a circumstance of modest prosperity. The incentive was that if the villages cooperated in farming operations, they could keep the profits for community purposes and if the profits were sufficient, they could purchase the land and become land owners. The project leaders found that the initiatives of the serfs with their intimate knowledge of farming capacity and climate, etc., supplemented by some technical expertise, essentially produced a significant sequence of crops and upon marketing, funds as well. It was important that the villages were participating in the decisions about agricultural production. This initial initiative raised questions about how to exercise decision making in managing the profits from farming activity. This permitted the interveners to promote the idea that maybe decision making should be shared with the community and decisions eventually evolved to

issues about healthcare, in particular, healthcare of women, schooling, including schooling for women, and the project evolved with a self conscious direction of training in the processes of decision making and an awareness of appropriate goal values. One significant event was when the community decided they would invest in a truck to transport their products directly to the metropole and increase the value of their products by direct marketing.

The model pursued in Vicos attracted external attention. Some of the Peruvian elites were particularly concerned about what they saw as an incipient process of empowering the underclass. Other Indian communities saw Vicos as a model that they would try to emulate. The Vicos leadership were willing to transfer skills to other Indian communities as well. Unfortunately, a delegation of Indian leaders on the way to Vicos to retrieve the recipe were attacked by hired goons. Several were killed. This gave the sovereign Peruvian state an excuse to terminate the project on the basis that it was disruptive of social peace. Although the project was ended technically, enough of the seeds of change and the processes of decision making to enhance human capital had been transferred. This village is still an example of the importance of developing human capital on the basis that it is sustainable over time.

The idea behind Vicos was recently of interest to the World Bank. One of the participants in the project presented the Bank with a broad prototypical framework of how this could be replicated elsewhere. The World Bank has also developed a more limited version of this idea in its projects that have dealt with micro-enterprise finance. It would seem that bank theorists would prefer to focus on a narrower framework of value institutional capital. The Vicos project combines elements of macro theory, intermediate macro theory and micro theory. The theoretical value of the Vicos experiment is that it can be simplified in terms of a useable development prototype. In this sense, it could have some value for new economic theory to focus on the multitude of possible prototypes that might be given operational effect worldwide. Several years ago, I discovered that there were several women from the village of Vicos who had completed advanced doctorates in the United States.

8. Human and Social Capital Development: Opportunity Lost

When the transformation to democracy in South Africa was underway, the ANC, the major opposition party at that time, convened a meeting to discuss central concerns in the development of a new South African Constitution. I was invited to attend and to present a paper on the problems of socio-economic justice under a new dispensation. The focus of my paper was on the transitional arrangements in which the previous government was giving away huge amounts of state investment to its friends and cronies. In short, a new black government coming in would have very little in the treasury to devote to the issue of social justice and the consequences of the apartheid system. I wrote a paper in which I suggested that the constitution should include in its text the idea of a human right to development. I generally suggested that the foundation of such a right would be in the empowering and decision making skill of the poorest of the poor. In short, the paper worked on the assumption that the poor have the least effective voice in the arenas of governmental power.

To my surprise, I found that many of the ANC's leaders were skeptical of this idea. One of them said, "you need to show us how such an idea could be implemented practically, as a constitutional mandate." The assumption behind this was that as an institutional matter a court of law would be ill equipped to prescribe and apply this idea without entrenching on executive and legislative powers of the other branches of government. I then produced a response. I suggested that the right to development idea include in its text the creation of a constitutional commission on the human right to development. This commission would comprise of experts in law and disciplines related to development. One of their functions would be to serve as an arm of advocacy of the poor. In this role it could monitor legislation or executive action to determine its effect on the aspirations of the poor and it could advocate for changes sensitive to the claims of the poor. Additionally, the commission could have an arm of education in which it would seek to transfer education about decision, values and institutions. It could have a propaganda arm to generate solidarity among the poor and a sympathetic perception of the poor in the larger body politic. It could also monitor legislation and determine whether such legislation in undermining the interest of the poor was also undermining the interests of the constitution. In short, they would have a strong arm of well funded litigation capabilities. Regrettably, the forces opposed to establishing a human right to development as a constitutional right prevailed, and I lost. However, the position of the poor in South Africa has remained somewhat static with an unemployment rate of about 25 percent. I have recently heard from scholars who have found my paper and suggestions that had this issue been resolved and adopted, South Africa would have been in a far better position today than has been the case.

I used the two illustrations from Vicos and South Africa to indicate that a state centric model of development may in certain circumstances be a problem. In other work I have done in Latin America, I have found the state support for the plight of the poor to be a verbal truism. However, when concrete initiatives are generated, what state elites see is that the empowerment of the poor or the indigenous people may constitute a threat to the primacy of the current elite. It therefore means that a new economic theory has to be sensitive to the sovereignty dynamics of imperium and dominium and must also search for those elements of fundamental law and human rights law to weaken the negative inclusions of the state and hopefully to strengthen the real public interest in the body politic. In the South African illustration given, we can only speculate about the specific role of a constitutional right to development in the enhancement of human and social capital. But it is a matter that a new economic theory should seriously consider.

9. Issues that a New Global Economic Theory Founded on the Basis of the Normative Salience of Human and Social Capital May Consider

9.1 The Right to Development and the Millennium Declaration

This is a program generated and promoted by the UN. It is an aspect of the UN's commitment to the universalization of the right to development. The program has struggled for want of support from globally privileged centers of economic advantage. However, the goals

of the millennium initiative are intricately connected with the ideas of generating policies that secure and advance the importance of human and social capital. The specific goals are as follows:

- Eradicate extreme hunger and poverty
- Achieve universal primary education
- Promote gender equality and empower women
- Reduce child mortality
- Improve maternal health
- Combat HIV/AIDS, malaria and other diseases
- Ensure environmental sustainability
- Develop a global partnership for development

One of the factors that may have diminished the global salience of this initiative is that it isn't sustained by an articulate, coherent and compelling economic theory. This kind of initiative would benefit from the thinking generated from the World Academy's effort and call for a revolution in economic thinking.

9.2 The Problem of Globalizing and Institutionalizing World Economic Policy

In general, the UN was the key forum generating discussions concerning a political economy of world order based on the NIEO or the principles centralizing private property and neo-liberalism. What emerged was a shift in the locus of discourse from the UN to something outside of the UN. This emerged as a group of four, group of eight and more recently, a group of twenty. For an outsider this appears to be the creation of a kind of global, economic Security Council functioning outside of the UN's authority structure. This raises the question about such an important forum and its level of institutionalization, which would include a concern for transparency, responsibility, and accountability and more pertinently, what its normative foundations are. For example, does its process explicitly and deliberately embrace a right to development as a human right rooted in the concern for human and social capital? Here it seems that at another level of international concern, the call for a revolutionary economic theory would require that the theory critically evaluate whether the organization of the group of twenty diminishes or enhances global solidarity and well-being. We would do well to consider the disappointment of Nelson Mandela when he met with the G8. According to Mandela, everyone had their pens and papers but the pens had no ink. According to him:

"As long as poverty, injustice, and gross inequality persist in our world, none of us can truly rest... The steps that are needed from the developed nations are clear. First, is ensuring trade justice... The second is an end to the debt crisis for the poorest countries. The third is to deliver much more aid and to make sure it is of the highly quality... But not to do this would be a crime against humanity, against which I ask all humanity now to rise up."

9.3 Corporate Responsibility for Global Values

Corporations have as a primary responsibility a focus on profit maximization. As institutions of economic power in the global context many corporations have GDPs that are higher than many states. Yet, the control and regulation of corporate conduct globally is weakly regulated and falls far short of the importance of transparency, responsibility and accountability. In short, a new revolutionary economic theory must apply as appropriate principles of good governance to private for-profit entities in order to make them so far as possible accountable for the fundamental values of human rights, human dignity, and the deliberate focus and development of the widest level of human and social capital. Practice falls short of this objective. In significant measure major transnational corporations find attractive the global business environment which has weak regulatory standards. In such a context corporations can make up their own rules of the game and some of these practices may be seen as significantly contrary to agreed upon global values. Let me provide two anecdotal illustrations:

John Perkins in his well reviewed book, *Confessions of an Economic Hit Man* (2004), provides a multitude of examples of the construction of state indebtedness in which states are scammed into obtaining vast loans for development projects. The loans fund foreign companies engaged in dubious projects and vast sums are siphoned off to local elites which end up in foreign bank accounts. Years later, when honest governments come to power, they find they are straddled with an enormous debt and can find nothing to show what the funds were expended on.

Another illustration is the vast pollution of the upper reaches of the Amazon by Texaco/Chevron. Here the company was both negligent and venal in its casual and colossal pollution from its oil extracting operations. It fought tooth and nail to prevent itself from being accountable. Its practice included bribes and other forms of corruption. Eventually, an Ecuadorian Court found them liable for the pollution in the amount of some nineteen billion dollars. The company is still trying to fight the judgment. We could provide scores of examples where corporate operations involve the support of practices which violate human rights. I will not mention the role of the private sector in the globalized drug industry or practices of sex trafficking. These are criminal for-profit activities. Currently, there is a strong body of evidence that suggests that corporate malfeasance, negligence, or greed, has had a great deal to do with the current recession. This has raised the question of an economic theory that may more critically examine and appropriately contextualize the structure and function of corporate enterprise in global society. Among the suggestions for reform are the following:

- Limit the power of top executives and financial decision-makers who may have the power to use the corporation for inappropriate ends and for personal gain;
- Allow institutional investors, such as pension fund managers, to nominate independent directors to the boards of the corporations in which they are major investors;
- Implement an aggressive program to make employees at all levels stakeholders in the corporation itself, thus giving them an interest in the success of the corporation;

corporations may achieve this by awarding stock options to employees as bonuses or rewards for excellent company performance;

- Give blue and white collar employees a direct voice in corporate decision-making to represent the perspectives of professional and non professional employees in the business to improve the objectivity and quality of corporate decision-making;
- Reduce salary packages and stock options for top-level executives to avoid artificial inflation of the company's share price; stock options may remain part of an executive incentive package, but the corporation should limit their magnitude to protect and enhance corporate interest.

9.4 Human Social and Capital Development in the Context of World Trade Issues

One of the central challenges at a practical level is the problem of free trade and the idea that free trade favors the powerful and the alternative idea of fair trade which favors a balanced perspective. Some of the issues that serve as an important dividing point of reference are listed below:

- A critical review of the "North" states' agricultural subsidies. The \$353 billion of agricultural subsidies given by the North to its farmers radically depresses world prices of agricultural commodities critical to Africa; as a consequence, African produce remains unsubsidized while the North subsidizes its produce, generating manifestly unfair competition;¹
- A critical review of WTO's rules of the past that institutionalized discriminatory trade consequences for the South;
- Improved "special and differential treatment" in WTO agreements for the "South" would permit poorer nations to adjust or generate some flexibility in the application of WTO agreements;
- For improved access to the "North" markets, the least developed countries, including thirty-three in Africa, should be given duty-free rights of access.
- Enlarged "Aid for Trade" to facilitate the volume of export to "North" markets would improve compliance with WTO rules.

These issues are summarized as problems for global development by Professor Stiglitz as follows:

Both as it was conceived, and even more as it has evolved, today's development round does not deserve its name Many of the issues that it has addressed should never have been on the agenda of a genuine development round, and many issues that should have been on the agenda are not.... Those in the developing world who believe that there has been a history of bargaining in bad faith have a strong case.²

When the trade issues are put into the context of the priorities of the World Bank for example, the question has been raised in bank circles as to how much human rights should

factor into its financing of a bank conceived developmental agenda. Perhaps the time is now approaching for the economic foundations of the bank's policy and direction to be subjected to a more compelling and even possibly, a revolutionary rethinking of the appropriate theory for the economic ordering of the World Bank. In the context of the bank's work, there should be a recognition of a global commitment to a right to development with an explicit emphasis on the development of human and social capital as the true repository and generator of human values on a global scale.

10. The Development Agenda According to Neo-Liberalism (Free Trade/Fair Trade)

The World Trade Organization (WTO) has undergone a continuing crisis of indecision.³ When the WTO admitted third world players to its process, it had to ensure that third world governments and their advisors understood the complex rules governing world trade and development.* Thus, the WTO consistently assumed that third world countries would violate ground rules of world trade. The experience in the organization and the greatest skill of those representing the so-called "South" states began to review more critically the fine print of agreements and regulation to avoid discrimination through the rules and processes of the WTO. Thus, the "South" began to push for a much more informed discussion and a more meaningful agenda reflecting its critical interests. These interests represent Africa's interests as well. The agenda it put forward contained the following issues:

These claims were presented to the WTO process during a period dominated by the mantra of economic liberalization and free trade. The WTO, while making verbal commitments with some measure of empathy for the claims of the South, has in effect done very little to advance them politically or legally. Mr. Tetteh Hormeku of the Third World Network best articulates the nature of the problem from the African perspective:

Trade liberalization has not been beneficial to African economies. We have not improved our location in the global economy. We have not moved out of dependency on primary commodities. We have not moved into more efficient provision of manufactured goods and services. We are on the receiving end of the global economy, which is repatriating our resources and locking in IMF and World Bank conditionalities through trade agreements.... What we have at the moment is a trade paradigm that African countries should open up all sectors of their economy to foreign providers in a context that destroys the basis for domestic production and jobs. It can never lead an African country out of poverty.⁴

Conclusions can be drawn from the two illustrations of enterprise economics in the global system. The major role lawyers play in defining the maximum freedom for the corporate or entrepreneurial sector indicates that a corporation with an army of lawyers might fare well in the system. Conversely, when governments and private sector watchdogs seek to police the business sector, they often cannot generate the legal muscle to constrain corporate or econo-

* Peter Van Den Bossche, *The Law and Policy of the World Trade Organization: Text, Cases and Materials* 24 (2005).

mic license. This presents a challenge to the legal profession and to the teaching of law. An effective and socially responsible corporate or legal culture may function optimally when it works within a framework of established rules expeditiously and fairly enforced.

It is hard to imagine a successful capitalist system without an excellent commercial and corporate legal framework. This framework is in fact a central feature of a working, dynamic, entrepreneurial system. When the system works well, the corporate lawyers themselves, within the corporations, serve as an internal restraint to ensure compliance with the law and to ensure further that corporate energy and resources are not wasted on public investigations and possible prosecutions. The WTO system also seems to have developed without regard to effective input from the lawyers of the South. When they finally learned the rules of the game, those who benefited from the unfair system were reluctant to modify the rules sufficiently to reflect the fundamental policies of world economic order. It is clear, however, that without a legal framework that is defensible, free trade may become unfair trade, and grotesque exploitation may lead to conflicts and alienation.

Thus, there must be some circumspection about how the global economic system appropriately is regulated so that corporate activity falls within the fundamental norms established by law. There is no obvious or easy answer to the problem of managing power, material, technological and financial resources, and common rules that function within and across state lines without a framework of developed legal expectations. Lawyers must play a major role in organizing the business of teaching business; they can outline appropriate legal standards to enhance accountable and responsible enterprise. In short, the ideological principle that enterprise behavior does not include social responsibility is no longer tenable. However, this new view requires more focus on the development of evolving legal rules and principles that touch on many areas of law—domestic, regional, and international.

11. Conclusion

*The Consequences of the Current Global Economic Order: The Need for a Revolutionary Global Economic Theory of the Right to Development with an Emphasis on Decision and the Salience of Human and Social Capital.*⁵

The shortest way to get a grasp of the consequences of the current state of global economic order is reflected in numbers. The planet has a population of roughly 6.5 billion people.⁶ Every year 30 million people die of hunger,⁷ and 800 million people are starving or suffer acute malnutrition.⁸ Roughly one billion are underemployed or unemployed.⁹ The above figure may be contrasted with the fact that the richest 2 percent of adults in the world own more than half of the global household wealth.¹⁰ The richest 1 percent of adults own 40 percent of the global assets, and the richest 10 percent account for 85 percent of the total world assets.¹¹ On the other hand, the bottom half of the world adult population owns 1 percent of global assets.* Every two minutes four people die from malaria.¹² One in five

* *Id.*

people (one billion people) in the world survive on less than \$1 a day.* Another 1.5 billion live on \$1 to \$2 a day.† More than one billion people do not have access to safe water.‡

About 2.6 billion people lack access to improved sanitation.§ Some authorities hold that approximately five hundred million people on the planet live in relative comfort, which is in stark contrast to the six billion people in the world who struggle to survive and live. Even in the United States, 44.8 million people are deprived of medical health care or coverage¹³ and almost forty million Americans live close to or below the poverty line.¹⁴ In short, globalism, which has produced a vast increase in the production of values, seems to fail miserably in the distribution or sharing of those values.

As the new millennium unfolds, statistics indicate that nearly 800 million people are illiterate.¹⁵ This fact illustrates that people basically are powerless. They are treated as economic commodities to be exploited by the powerful or as economic waste matter to be discarded by the market. The adverse effects that the global market has caused does not just include illiteracy, but other areas including demographics, the migration of people, issues of conflict, trade, aid, debt, debt repayment, etc. However, this new world order referred to as neo-liberal global economics, is not solely to blame. For example, the economic arrangements in China, India, Brazil, and other parts of Asia demonstrate that each of these state-commanded economies are designated to benefit the elite who are not held accountable by government constraints for their actions.

Further, neo-economic freedoms may vanish much like they did in the former Soviet Union, when it transitioned from a communist state to a capitalist market. These problems include the mass concentration of wealth in actors well-placed in the former communist regime.[¶] ¹⁶ Many of the dominant communist elite took a lion's share of state-owned enterprises, essentially claiming it as their own property.¹⁷ In order for economic freedom to be preserved, public and private laws need to be implemented and adhered to, in order to prevent a select few from destroying this freedom.

The economic revolutions in India, China, and Brazil were successful because their populations implemented a strong legal framework that did not allow any individual to manipulate the market system. The central flaw in the philosophy of economic liberalization from a lawyer's point of view is the principle that liberalization if unconstrained will result in a license for the liberalizer and oppression for the victim. A specific problem with socialist regimes is that the government can abuse its power of control. The concentration of power does not necessarily mean that everyone shares in it; such a belief is typified by the myth: "dictatorship of the proletariat." In practice, the proletariats likely will be disempowered by the internal elites who manage the power of the state, according to their own interests.

* *Id.*

† *Id.*

‡ *Id.*

§ *Id.*

¶ Twenty percent of the Russian population lives below the poverty line and the great majority of Russian families are teetering on the edge of poverty. Then there is the other Russia. The greatest part of shareholdings in the largest Russian enterprises can be found in the hands of this tiny social layer. According to a recent report, there are more billionaires in Russia (36) than anywhere else in the world. The total assets of these thirty-six richest Russians amounts to \$110 billion—24 percent of the country's economic output.

If we take a social democratic state where the power resides in both public and private sectors, a high level of disparity arises. Nonetheless, the power of the various groups, if reasonably well distributed, imposes certain checks and balances sufficient to sustain a reasonably transparent, responsible, and accountable system. For example, in a neo-liberal state, certain groups abhor government interference, except when the government acts in its interest. In this type of state, corporate culture stakes a claim to legitimacy on the basis that state officials and state elites simply are inefficient.

To generate economic efficiency, it is important to allocate as much power to economic enterprise as possible. Thus, labor unions must be weakened because they represent a dysfunctional limit on the freedom of enterprise. Social spending, spending for education, health, and other public purposes are matters for which the state is an ineffectual distributor. Thus, where possible, these matters must be privatized in order for these enterprises to be most efficiently run. In short, the private arena does not need many rules; the master rule of enterprise is to generate productivity and profit, while stimulating the interest for invention and for economic expansion. The public's fear of depreciation in social and political capital by such a process is seen as a necessary, but short-term, cost for the greater good of society.

The state's imperfections in its exercise of power recreates a need for a strong legal infrastructure that would help to foster the ideals of responsibility, transparency, and change. It is not clear what standards govern decision-making inside major economic enterprises when its business cannot be at an optimal level. Whether power and authority, transparency and openness are invested solely in government or not, we will not have solved the problem of how power itself is controlled, regulated, appraised, and changed in the interest of the people.

Furthermore, we should keep in mind that the abuse of economic power could have large-scale impacts on the political and legal cultures of a society and could generate social unrest and political deterioration.

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Building a Caring Economy and Society* Beyond Capitalism, Socialism, and Other Old Isms

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Abstract

Old economic approaches are not capable of meeting our economic, environmental, and social challenges. To effectively meet these challenges, we need a perspective that goes beyond the conventional capitalism vs. socialism debate. This paper places economic valuations in their social context from the perspective of two new social categories. It describes building blocks for a new paradigm for economics, focusing on new measurements, policies, and practices that support caring for people, starting in early childhood, as well as caring for our natural environment.

All around us are signs that old approaches are not capable of adapting to new circumstances. While many people still talk about returning to normal, there is growing recognition that we actually need a whole new way of thinking about economics and society.¹

But what should our direction be at this time of extreme social, environmental, and economic challenges? What do we need as we shift from the industrial to the post-industrial knowledge/service era? How do we build a more equitable and sustainable world?

This paper addresses these questions. Its point of departure is a key issue for our future: what kind of economic system helps, or prevents, children from developing their full potentials for consciousness, caring, and creativity – the capacities that are essential in the new knowledge-service era; the capacities that make us fully human?

1. Where We Are

Today, economic health is still measured by Gross Domestic Product (GDP). This measure pays no attention to poverty, hunger, or environmental degradation. Nor does it give any indication of the human and environmental damage caused by a large portion of the activities GDP includes as “productive” – damage that is still clumped under the quaint rubric of “externalities.”

For example, in the United States, where consumer spending accounts for no less than 70 percent of GDP, much of what is produced and consumed is known to cause disease – even

* Portions of this article are adapted from articles by the author in *Challenge* /March–April 2012, *Cross-Cultural Management*/2013, and *Tikkun Magazine*, November/December 2009.

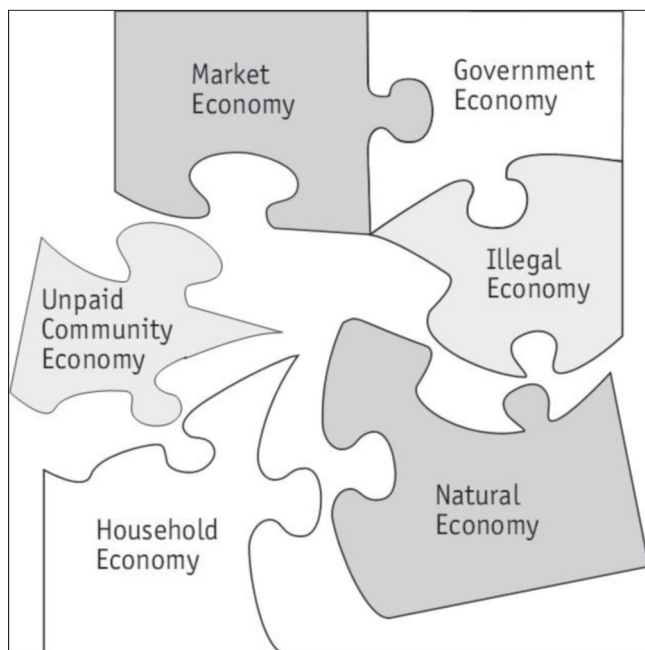
death. Multi-billion dollar industries – ranging from the chemical pesticide and fast food industries to the cigarette, alcohol, and gun industries – lead to enormous medical and funeral costs, all of which, in turn, are also included in GDP.

A growing segment of GDP consists of financial speculations that produce no real value. In the U.S. the financial sector is now almost ten percent of GDP, with its value fluctuating wildly, as when 3.6 trillion dollars of “wealth” disappeared into thin air through the Great Recession.

Not only that, appliances, electronics, and other products deliberately manufactured for planned obsolescence clutter up our landfills. And that is only a small part of the devastating environmental impact of current patterns of production and consumption.

On top of this, automation and robotics are taking over more and more jobs formerly held by people – making it even more doubtful that economies driven by consumer spending are sustainable.

Figure 1: Old Economic Map



Reprinted from Riane Eisler (2007) *The Real Wealth of Nations: Creating a Caring Economy*, San Francisco: Berrett-Koehler.

Yet other than calls for environmental protection and a more equitable distribution of resources, most discussions about a new economics are still primarily based on the premise that capitalism and socialism are our only alternatives. So, while some prescribe a return to unregulated capitalism, others again argue that socialism is the solution.²

This antiquated debate fails to recognize that our mounting global crises and the current technological shift from the industrial to post-industrial era require new thinking: that neither capitalism nor socialism can lead us to a truly new economy.

2. The Limitations of Capitalist and Socialist Theory

The theoretical foundations of capitalism and socialism came out of the 18th and 19th centuries, from early industrial times.³ While both theories were attempts to improve people's lives,⁴ both were constrained by the cultural environments in which they arose.

One of the most harmful limitations of these theories is that neither gives real value to the work of caring for either nature or people. Rather than recognizing environmental limitations, Smith's message was that wealth would grow endlessly thanks to the division of labor, technical advances, and the accumulation of capital governed by the invisible hand of the market powered by self-interest. Marx's scientific socialism gives nearly exclusive importance to the commodification of labor, with hardly any attention to the devastating impact of industrialization on nature – an industrialization that was then vigorously pushed in the former Soviet Union and China.⁵

As for caring for people starting in childhood, Smith and Marx considered this merely “reproductive” labor – not part of their “productive” economic equation. This distinction between “productive” and “reproductive” labor has been at the core of both capitalist and socialist thinking, which hardly ever considers the value of care and caregiving. And this distinction persists – despite its lack of accuracy, despite mounting evidence that not caring for our natural environment is potentially suicidal, and even despite findings from neuroscience that caring for people, starting in early childhood, is key to producing the “high quality human capital” essential for the post-industrial knowledge/service economy.

3. Reframing the Domain of Economics

Standard economics, business texts and courses do not teach us to think of economics from the perspective of caring for people or nature. Indeed, they fail to take into account the enormous economic value of the work of care, even though a growing number of studies are showing that companies that care for their employees and their families are actually more successful than those that do not.⁶

When caring for people starting in early childhood and hence human capacity development are the starting point for economic thinking, we can see that a basic problem in both capitalist and socialist theory is that neither is based on a *full-spectrum* economic map.⁷

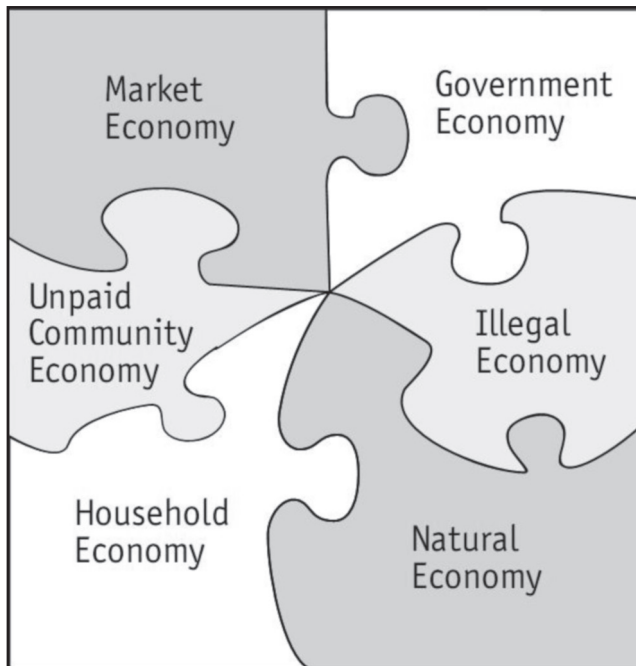
The focus of both capitalist and socialist thinking has been on only three sectors: the market economy, the government economy, and, more recently, the illegal economy.

This old economic map fails to include the real value of the three life-sustaining economic sectors: the household economy, the natural economy, and the volunteer economy. In other words, in accordance with the view that “productive” work is limited to paid work,

the conventional economic map gives no visibility to the largely unpaid work that has been termed “reproductive” work.⁸

An essential step toward a more systemic approach to economics is therefore a new economic map that includes these sectors. Using this systemic perspective, we can begin to design an economic system that effectively addresses the unprecedented social, economic, and environmental challenges we face: one that not only promotes human survival but full human development.

Figure 2: New Economic Map



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This does not mean we should discard everything from earlier economic theories. But moving forward requires an economic system that gives real visibility and value to the most essential human work: the work of caring for our natural environment and caring for people, starting in childhood.

“Economic systems do not arise in a vacuum. They are influenced by, and in turn influence, the larger social system in which they are embedded.”

Moving forward also requires that we recognize that economic systems do not arise in a vacuum. They are influenced by, and in turn influence, the larger social system in which they are embedded.

As Ian Johnson and Garry Jacobs note, “The time is ripe for a new narrative, new metaphors and a new story line for humanity.”⁹

4. The Interconnection of Economics and Society

Answering the fundamental question of what kinds of social systems support or inhibit our human capacities for consciousness, caring, and creativity requires that we move beyond conventional thinking. To paraphrase Einstein, we cannot solve problems with the same thinking that created them.

We are used to classifying societies into categories such as religious vs. secular, rightist vs. leftist, Eastern vs. Western, or industrial vs. pre- or post-industrial. But none of these categories describes the totality of a society’s beliefs, institutions, and relationships, as each focuses on a particular feature of society. Moreover, societies in every one of these categories have been unjust, violent, and destructive of our natural environment.

The new categories of the *partnership system* and the *domination system* reveal the configuration of two very different forms of family, educational, political, and economic structures and relations.¹⁰ Depending on the degree to which a society orients to either side of the domination/partnership continuum (and it is always a matter of degree), these categories also describe two very different systems of values, which in turn directly affect a society’s guiding beliefs and policies.

5. Domination Systems

The configuration of the *domination system* supports relations of top-down rankings: man over man, man over woman, race over race, religion over religion, nation over nation, and man over nature. From the perspective of conventional categories, Hitler’s Germany (a technologically advanced, Western, rightist society), the Taliban of Afghanistan and fundamentalist Iran (two Eastern religious societies), and the would-be regime of the rightist-fundamentalist alliance in the United States seem totally different.

But all have the three mutually supporting core components of the domination system:

- top-down control in both families and states or tribes;
- rigid male dominance — and with this, the devaluation by both men and women of anything stereotypically considered “feminine,” including care and caregiving;
- the acceptance, even idealization, of violence as a means of imposing one’s will on others

If we re-examine the critique of capitalism as unjust and exploitative from this perspective, we see that in reality it is a critique, not of capitalism *per se*, but of the beliefs,

institutions, and relationships inherent in domination systems – be they ancient or modern, Western or Eastern, feudal, monarchic, or totalitarian. We see that long before capitalist billionaires amassed huge fortunes, Egyptian Pharaohs and Chinese emperors hoarded their nations' wealth. Indian potentates demanded tributes of silver and gold while lower castes lived in abject poverty. Middle Eastern warlords pillaged, plundered, and terrorized their people. European feudal lords killed their neighbors and oppressed their subjects. In all these pre-capitalist times and places, the gap between haves and have-nots was huge and the mass of people had little if any chance to improve their lot. In short, they were all rigid domination systems.

So, neo-liberalism can best be understood in terms of the foundational components of domination systems. To begin with, the policies advocated by this recent iteration of unregulated capitalism are designed to reconsolidate wealth and power in the hands of those on top.¹¹ While neo-liberal rhetoric is about freedom, what this really means is freedom for those on top to do what they wish, free from government regulation.¹² Its "trickledown economics" represents a return to the "traditional" order where those at the bottom are socialized to content themselves with the crumbs dropping from their masters' opulent tables.

The neo-liberal promotion of rushing into a "preemptive war" against Iraq continued the traditional reliance of domination systems on violence. And the neo-liberals' alliance with the so-called religious right reinforces still another core component of domination systems: a "traditional" highly punitive family where children learn that it is very painful to question orders, no matter how unjust, and where the ranking of one half of humanity over the other half is presented as normal and moral – a mental and emotional template for equating *all* differences with either superiority or inferiority, dominating or being dominated.

With this ranking of male over female comes another distinguishing feature of neo-liberalism: its contempt for the "soft" or stereotypically "feminine," as in the vitriolic attacks on what they call the "nanny state." Accordingly, a key neo-liberal requirement is that government programs designed to care for people, such as healthcare, childcare, and aid to poor families, be defunded both in the United States and through structural adjustment policies in the "developing" world, with "austerity," a code name for defunding such programs and instead funneling billions to big banks, insurance companies, and automakers that need "bailouts."

From the new perspective of the domination/partnership continuum, we can also see that Smith developed capitalist theory at a time when the ranking of "superiors" over "inferiors" was still the general norm – be it of kings over their "subjects," trading companies over colonized peoples, "superior" races over "inferior" ones, or men over the women and children in the "castles" of their homes. In other words, capitalism was developed in times that still oriented much more to the domination side of the partnership/domination continuum.

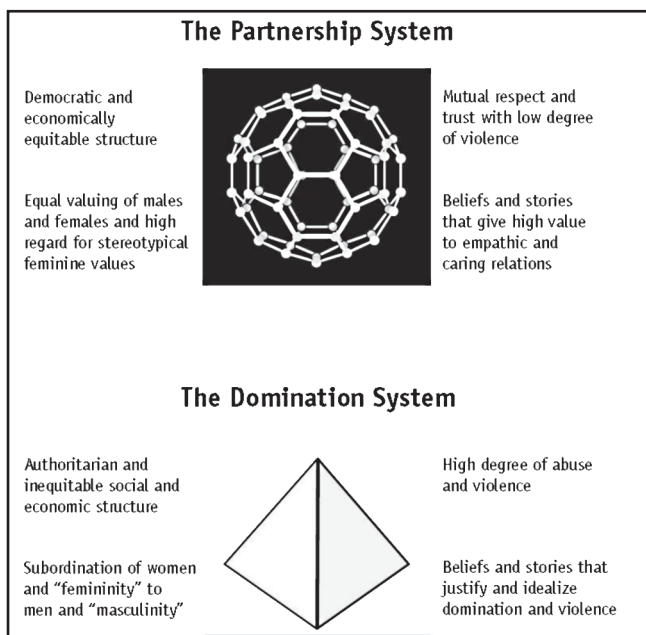
Similarly, while Marx's theories came out of times when there were already organized challenges to these rankings, they too reflected and perpetuated dominator assumptions – including the devaluation of women and anything stereotypically associated with women,

such as care and caregiving. Moreover, when Marx's goal of a "dictatorship of the proletariat" was realized in the former Soviet Union and China, it was in cultures where a rigid domination system had long been established. So, not surprisingly, authoritarianism, violence, and male dominance still remained the norm.

6. Partnership Systems

The partnership system's configuration supports social and economic relations of mutual respect, accountability, and benefit. This does *not* mean that there is only cooperation in partnership systems; people cooperate all the time in domination systems: monopolies cooperate, terrorists cooperate, criminal gangs cooperate, invading armies cooperate. Moreover, it does *not* mean a completely flat structure. There are also hierarchies in partnership systems. But rather than *hierarchies of domination* where accountability, respect, and benefits only flow from the bottom up, partnership systems have *hierarchies of actualization*, where power is not used to disempower, but to empower others.¹³

Figure 3: The Partnership & Domination Systems



Reprinted from Riane Eisler (2007) *The Real Wealth of Nations: Creating a Caring Economy*, San Francisco: Berrett-Koehler.

Societies orienting to the partnership side of the partnership/domination continuum can also be very different in terms of conventional social categories. For example, they can be tribal, such as the Teduray of the Philippines studied by the University of California anth-

ropologist Stuart Schlegel.¹⁴ They can be agrarian as the Minangkabau people of Sumatra, studied by the University of Pennsylvania anthropologist Peggy Reeves Sanday.¹⁵ They can be industrialized, as we see in Scandinavian or Nordic countries.¹⁶

But these otherwise very different partnership-oriented societies all share the same core configuration:

- a more democratic and egalitarian structure in *both* the family and state or tribe;
- equal partnership between women and men, and with this, a high valuing in women and men as well as in economic policy of traits and activities stereotypically considered feminine such as care and caregiving;
- a low degree of abuse and violence, because they are not needed to maintain rigid rankings of domination.

For example, in nations such as Sweden, Finland, Norway, and Iceland, we find more democracy and equality in both the family and the state; a higher status of women (approximately 40 percent of their national legislators are female); and concerted efforts to leave behind traditions of abuse and violence (they pioneered the first peace studies, enacted the first laws prohibiting physical discipline of children in families, and have a strong men's movement to disentangle "masculinity" from its equation with domination and violence).

These are not ideal societies. But supported by this more partnership-oriented social configuration, these nations enacted economic policies that combine positive elements of socialism and capitalism — but go beyond both by adopting economic inventions that give priority to caring for people and nature. They have government-supported childcare, universal healthcare, stipends to help families care for children, elder care with dignity, and generously paid parental leave.

These more caring policies, in turn, were key in these countries' move from extreme poverty (famines in the early 20th century) to regularly ranking high in the United Nations' annual Human Development Reports in measures of quality of life as well as in the World Economic Forum's annual Global Competitiveness reports today.¹⁷

These nations have a generally good living standard for all. They have low poverty and crime rates and high longevity rates. Because they also provide good family planning and encourage women to enter the paid labor force, their support for raising children has not led to a population explosion.

They pioneered environmentally sound industrial approaches such as the Swedish "Natural Step" and are ahead of most nations in meeting their goal of environmental sustainability. Some of the first experiments in industrial democracy came from Sweden and Norway, as did studies showing that a more participatory structure — where workers play a part in deciding how to organize tasks and what hours to work — can be extremely effective. Moreover, Nordic nations have a long history of business cooperatives, jointly owned and democratically controlled enterprises that have included concern for the community in which they operate as one of their guiding principles.

With the ascendancy of neo-liberalism and the globalization of unregulated capitalism over the last decades, Nordic nations too began to move toward more privatization. Nonetheless, they have been able to maintain most of their caring policies and hence their high rankings in international surveys of quality of life—ranging from environmental and human rights ratings to infant mortality rates, where the U.S. by contrast fell behind every industrialized nation and even poor ones like Cuba.¹⁸

A basic reason is that these nations continue their investment of resources in caring for people and nature. Indeed, these nations contribute a larger percentage of their gross domestic product than other developed nations to caring for other nations and races: to fund and carry out programs working for fair economic development, environmental protection, and human rights.

It has sometimes been said that Nordic nations have a greater investment in their human and environmental infrastructure because they are relatively small and homogeneous. But their investment in helping people from all world regions contradicts this claim. Moreover, in smaller, even more homogeneous societies such as some oil-rich Middle-Eastern nations where absolute conformity to one religious sect and one tribal or royal head is demanded, we find huge gaps between haves and have-nots along with the rigid subordination of the female half of humanity and a heavy reliance on fear and force to maintain their domination systems.

So, we have to look at other factors to understand why Nordic nations have a more caring and equitable economic system. One of these factors, still ignored in mainstream economic analyses, is greater equality between the male and female halves of humanity, as illustrated by the fact that women can, and do, occupy the highest political offices and comprise a large percentage of national legislatures. And while this was certainly not the only factor, the higher status of Nordic women has had important consequences for the values that guide Nordic policies.

In domination-oriented systems, men are socialized to distance themselves from women and anything stereotypically considered feminine, lest they be tagged with humiliating labels such as “wimp,” “sissy,” or “effeminate.” By contrast, in partnership-oriented cultures, men can give more value to care, caregiving, non-violence, and other traits and activities deemed inappropriate for men in dominator societies because they’re associated with “inferior” femininity. So, along with the higher status of Nordic women, many men and women back more caring policies—policies that give value and visibility to the work of caring for people and nature.¹⁹

7. Economics, Values, and Gender

We are not used to the idea that the status of women has anything to do with economic success. However, this connection has been empirically verified by international studies.

Already in 1995, a study conducted by the Center for Partnership Studies, “Women, Men, and the Global Quality of Life,” compared statistical measures from 89 nations on the status of women with measures of quality of life such as infant mortality, human rights ratings, and

environmental ratings. It found that in significant respects the status of women can be a better predictor of quality of life than Gross Domestic Product (GDP).²⁰

Since then, other studies have verified the relationship between the status of women and a society's general quality of life and economic success. The *World Values Survey* is the largest international survey of how attitudes correlate with economic development and political structure. In 2000, this survey focused attention on attitudes about gender for the first time. Based on data from 65 societies representing 80 percent of the world's population, it found a strong relationship between support for gender equality and a society's level of political rights, civil liberties, and quality of life.²¹

More recently, the World Economic Forum's *Global Gender Gap Reports* show that the nations with the lowest gender gaps (such as Norway, Sweden, and Finland) are also nations that are regularly in the highest ranks of the World Economic Forum's *Global Competitiveness Reports*.²²

There are many reasons for a correlation of the status of women with national economic success and quality of life for all. One, of course, is that women are half of humanity. But the reasons go much deeper – to the still largely unrecognized interconnected social and economic dynamics inherent in domination or partnership systems.

We have already seen the correlation between the higher status of women and values and policies that support caring for people, starting in early childhood. But there are also a myriad of other factors.

In cultures where women are rigidly subordinated, the distribution of household resources also tends to be skewed in ways that fail to invest in children's well being and development. There is empirical evidence across diverse cultures and income groups that in these domination-oriented cultures women have a higher propensity than men to spend on goods that benefit children and enhance their capacities. In "Intra-Household Resource Allocation," Duncan Thomas found that \$1 in the hands of a Brazilian woman had the same effect on child survival as \$18 in the hands of a man.²³ Similarly, Judith Bruce and Cynthia B. Lloyd found that in Guatemala an additional \$11.40 per month in a mother's hands would achieve the same weight gain in a young child as an additional \$166 earned by the father.²⁴

Of course, even in rigidly male-dominated cultures there are men who give primary importance to meeting their families' needs. However, men in such cultures are socialized to believe it's their prerogative to use their wages for non-family purposes, including drinking, smoking, and gambling, and that when women complain, they are nagging and controlling. As Dr. Anugerah Pekerti (chair of World Vision, Indonesia) notes, many fathers seem to have no problem putting their immediate desires above the survival needs of their children.²⁵

The effects of the subordination of females to males on intra-household resources distribution go even further. In some world regions, parents (both mothers and fathers) often deny girls access to education, give them less health care, and even feed girls less than boys. These practices obviously have extremely adverse consequences for girls and women. Indeed, they

are horrendous human rights violations. But giving less food to girls and women also adversely impacts the development of boys, as children of malnourished women are often born with poor health and below-par brain development.²⁶

So, this gender-based nutritional and healthcare discrimination robs *all* children, male or female, of their potential for optimal development. This in turn affects children's and later adults' abilities to adapt to new conditions, tolerance of frustration, and propensity to use violence—which impede solutions to chronic hunger, poverty, and armed conflict, as well as chances for a more humane, prosperous, and peaceful world for all.

Indeed, there is no realistic way to end cycles of poverty without taking into account another gender-related matter: that women represent a disproportionate percentage of the poor worldwide. According to some estimates, 70 percent of those who live in absolute poverty, which means starvation or near starvation, are female.²⁷ Even in the rich United States, woman-headed families are the lowest tier of the economic hierarchy. And according to U.S. Census Bureau figures, the poverty rate of women over sixty-five is almost twice that of men over sixty-five.²⁸ This is not only due to wage discrimination in the market economy; it is largely due to the fact that these women are, or were for much of their lives, either full or part-time caregivers—work that was neither paid nor later rewarded through social security or pensions.

None of this is to say that economic inequities based on gender are more important than those based on class, race, or other factors. These inequities are all inherent in domination systems.

But a basic template for the division of humanity into those to be served and those that serve, which children in dominator families internalize early on, is a male-superior/female inferior model of our species. And this is a template for relations that can then automatically be applied to ranking one race, religion, or ethnic group over a different one. In addition, with the ranking of male over female comes the devaluation of anything stereotypically associated with the “feminine.” So, it is not realistic to expect more caring policies and practices as long as care and caregiving are systemically devalued as “soft” or “feminine.”

I here want to emphasize that what we are dealing with are *stereotypes* of masculinity and femininity based primarily on gender-specific socialization processes, *not* with innate biological differences between women and men. I also want to emphasize that none of this is a matter of blaming men for our problems. Indeed, most women, like most men, have in domination systems not just been passive victims but often active collaborators in maintaining rankings of domination – including the ranking of man over woman – in conformity with religious and secular teachings that such rankings are divinely or genetically ordained.

What we are dealing with are systems dynamics in which the social construction of the roles and relations of the female and male halves of humanity plays a key role in shaping social and economic institutions and the values that guide policies and practices.

8. Valuing Nature and Caring for People

Even our environmental crisis is largely a symptom of the distorted values inherent in domination systems. We're often told that the Western scientific-industrial revolution that began to gain momentum along with the Enlightenment in the 18th century is to blame for the havoc we're wreaking on our natural life-support systems.²⁹ But the "conquest of nature" worldview goes back much further.

We inherited an economics based on the premise that man is entitled to control both woman's and nature's life-sustaining activities. In Genesis 1:28, we read that man is to "subdue" the earth and have "dominion . . . over every living thing that moveth upon the earth." In Genesis 3:16 we read that man is to rule over woman, who is to be his subordinate.

However – and this is an important point – this notion of male control over nature and woman is *not* exclusive to the West. And it was *not* introduced in the Bible, but much earlier.

For example, the Babylonian *Enuma Elish* tells us that the war god Marduk created the world by dismembering the body of the Mother Goddess Tiamat. This story, claiming that the violence of a male deity brought forth the world, superseded earlier myths about a Great Mother who created nature and humans as part of nature through her life-giving powers.

Such stories clearly signal the beginning of a period when female deities, along with women and anything associated with them, were subordinated. And they signal a shift to a domination system in which masculinity is equated with domination and conquest – be it of women or of nature.³⁰

This ethos of domination has led to enormous suffering and damage for thousands of years. But the plunder of nature, now aided by powerful technologies that cause terrible harm in a matter of years, even months and days, today threatens our planetary life-support systems.³¹

There are other crises that stem from the distorted values we inherited from more rigid domination times. One of these is what we might call the caring crisis.

It is generally agreed that the aging of the world's population requires more attention to their care. In addition, with the move to the post-industrial knowledge/service era, more support for parenting and high quality early childhood education is also urgently needed – especially in light of the findings from neuroscience that the quality of care and education children receive affects nothing less than how their brains develop.³²

These two crises – the eldercare and childcare crises – require a whole new way of thinking about what is, and is not, productive work. Indeed, a redefinition of productive work is essential given the rapidly changing job landscape.

9. Redefining Productive Work

Robotics and other forms of automation have already altered the employment landscape in unprecedented ways, with the continuing loss of manufacturing and white-collar jobs, and

increasingly also of programming and other high-technology jobs. Predictions are that many mid- and high-level jobs will also disappear because of the expansion of automated intelligent systems capable of decision-making, advisory, and analytical functions. While these artificial intelligence systems are not likely to replace humans altogether, they will markedly reduce the number of people needed to support business and government activities.

As we move further into the post-industrial economy, the industrial job base will shrink as radically as the agricultural job base shrank earlier, from employing a majority of workers to less than 5 percent. But unlike industrialization, automation does not offer large numbers of replacement jobs, especially in the nonprofessional occupations that until now provided mass employment.

To meet the challenges of the post-industrial world we need policies and practices that support and reward activities that machines and high-technology devices, no matter how sophisticated, cannot perform. It requires educating and remunerating people for caregiving.

Doing this will not only help close the caring gap – the worldwide lack of care for children, the elderly, the disabled, and the sick and infirm. It will also eventually lead to a redefinition of “productivity” that gives visibility and value to what really makes us healthy and happy – and in the bargain leads to economic prosperity and ecological sustainability.

But this requires fundamental changes in economic thinking. It requires getting past the old distinction between “reproductive” and “productive” work. It also requires new ways of measuring economic productivity.

10. New Economic Measures

As noted earlier, conventional indicators of economic health such as GDP (gross domestic product) place activities that *harm* life on the plus side. At the same time, they give absolutely no value to the life-sustaining activities of the household economy, the volunteer economy, and the natural economy. So, an old stand of trees is only included in GDP when it’s cut down – whereas the fact that we need trees to breathe is ignored. Similarly, economists often speak of parents who do not hold outside jobs as “economically inactive”—even though they often work from dawn to midnight.

Thanks to the activism of organizations worldwide, many nations now have “satellite” accounts that quantify the value of the work of caring for people and keeping healthy home environments. For example, a 2004 Swiss government report showed that if the unpaid “caring” household work still primarily performed by women were included, it would comprise 40 percent of the reported Swiss GDP.³³

Nonetheless, even most indicators currently being developed as alternatives or supplements to GDP still fail to include this kind of information. A recent survey by the Urban Institute of a cross-section of such indicators, *The State of Society: Measuring Economic Success and Human Well-Being*, found that most of these “alternative” indicators still fail to give adequate visibility and value to the work of caring for people or the contributions of women.³⁴

As a follow up to this report, in 2012 a meeting was convened by the Urban Institute and the Center for Partnership Studies in Washington DC to pave the way for the development of *Social Wealth Indicators* as a step toward more accurate and inclusive measures of human well-being and economic success as the basis for more appropriate government and business policies. Twenty economists, including experts on the value of care work in both the paid and unpaid economic sectors and scholars specializing in the return on investment from high quality early childhood education, discussed the development of Social Wealth indicators and their inclusion in the new U.S. Key National Indicators System authorized by Congress as well as in other national accounts.³⁵ These are all steps toward a new way of thinking about business and economics that can help us meet the unprecedented challenges our world faces today.

11. Conclusion

As Jakob von Uexkull noted, “we need to build a new story re-connecting us with our common future.”³⁶ In our environmentally threatened and inextricably interconnected world, fundamental changes in how we think about economics are essential.

We can no longer tolerate indiscriminate consumption, the continuing devastation of our natural environment, and chronic hunger and poverty. Neither can we afford to ignore the fact that, especially in the post-industrial knowledge/service era, we must invest in our human infrastructure – in caring for people, starting in childhood.

We already saw how caring policies in Nordic nations played a major role in their move from dire poverty to economic success and a high quality of life for all. Other examples abound, like the enormous financial benefits from investing in parenting education and assistance, as shown by the Healthy Babies, Healthy Children Canadian program,³⁷ and investing in high quality early childhood education, as shown by follow up studies of the U.S. Abecedarian Project.³⁸

There are many ways of funding investments in our world’s human infrastructure – investments that should be amortized over a period of years, as is done for investments in material infrastructure, such as machines and buildings. One source is by shifting funding from the massive, often unnecessary and wasteful, investment in weapons and wars characteristic of domination systems. Another is through savings on the immense costs of *not* investing in care and caregiving: the huge expenditures of taxpayer money on crime, courts, prisons, lost human potential, and environmental damage. Taxes on financial speculation and harmful activities such as making and selling junk food can also fund investment in caring for people and our natural habitat.

These investments are essential for business and economic success today. Good care for children will ensure we have the flexible, innovative, and caring people needed for the post-industrial workforce.³⁹ As shown by psychology and neuroscience, whether or not these capacities develop largely hinges on the quality of care children receive. Indeed, neuroscience shows that the quality of care and education children receive affects nothing less than the neural structures of the brain.⁴⁰

Even many of those who are privileged are today re-examining what makes for a good life. They recognize that after a certain level of material need has been met acquiring more possessions does not make for happiness – something also verified by social research.⁴¹ They recognize that what really matters is the quality of our relationships, the opportunity to do meaningful work, and a healthy natural environment.

“Through new ways of thinking and new economic inventions we can pave the way for a future where all children have the opportunity to realize their potentials for consciousness, empathy, caring, and creativity – the capacities that make us fully human.”

Especially in our time, when “high quality human capital” – flexible, creative people who can work in teams and think in long-term not only short-term ways – is essential for economic success, it can be argued that the caring activities still generally categorized as “reproductive work” are actually the most productive of all work. Similarly, caring for our natural environment is today a prerequisite not only for sustainability but for humanity’s future survival. And a major contribution to the necessary shift in economic and business priorities can be made by scholars reframing the economic and policy conversation – and moving beyond the idea that our only alternatives are either capitalism or socialism.

All this takes us back to the need for policies and practices that are good for children – today and for generations to come. If this goal guided government and business policies, continuing to use advanced technologies to pollute and destroy our natural habitat would be inconceivable. Also inconceivable would be the financial drain of chronic wars, corruption, and greed, and the unnecessary deaths of millions of children every year, not to speak of slashing government investment in childcare, health, and education.

Through new ways of thinking and new economic inventions we can pave the way for a future where all children have the opportunity to realize their potentials for consciousness, empathy, caring, and creativity – the capacities that make us fully human. But this will only happen if we leave behind old ways of thinking, and take into account key matters that until now have been left out, or at best marginalized, in both popular and scholarly discourse.

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Notes

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From Epicurus to Maslow: Happiness Then and Now and the Place of the Human Being in Social Theory

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Πάντων χρημάτων μέτρον ἄνθρωπος Πρωταγόρας
The human being is the measure of all things
- Protagoras

Abstract

Protagoras said, “The human being is the measure of all things”. This implies, among other things, that language, science and religion are human inventions, as are economics, money, efficiency, race, conflict, etc. As symbol-using animals, we have created these concepts to serve our purposes. But as our societies have increased in size and our concepts have become more abstract, there is a danger that we will forget our authorship and reify these symbols. This inhibits change in the way we name things, so we are always in danger of misunderstanding the reality we are describing. We seem to be at such a stage now as we employ 18th and 19th century theories to describe and, more importantly, create 21st century reality. One such idea has to do with human needs. Influenced by the abstract (economic) concepts we use, we have lost our sense of what we truly need. Epicurus and Maslow may help to review and reassess those concepts. Epicurus, by suggesting that our material needs are quite simple but that emotional and spiritual need satisfaction requires a small scale loving community, free from fear, and Maslow, by suggesting that our emotional development is age-related, which, besides therapy, may help in suggesting revisions in socioeconomic theory that would ensure the social conditions that would allow this development to take place successfully.

1. Three Challenges Facing Humanity Today

Humanity is faced with three major and interrelated challenges in the 21st century, all of which are derived in part from outdated assumptions, or metaphysical beliefs, as E.F. Schumacher called them in 1973 in his classic book, *Small is Beautiful*.¹ These are assumptions about nature, and about human beings and their societies that we have inherited from the past. They are found embedded especially in current mainstream economics, the (self designated) ‘queen’ of the social sciences, and continue to have effect because of an indifference to the message of Heraclitus that, “We cannot enter the same river twice”, often rendered as, “τα πάντα ρει” – “all things change (flow)”, a metaphor expressing, among other things, the idea that we are always in danger of applying obsolete ideas to new circumstances.

The challenges of the 21st century, themselves, are economic, environmental and in particular, philosophical (psychological). Mainstream economists derive their assumptions about the economic system, about nature and about humans from the beliefs and conditions that were prevalent in the 18th and 19th centuries. More specifically, these assumptions were designed to liberate humans from the religious dogma that constrained the freedom of thought and behavior at that time. In the place of an (angry) God, they substituted, on the one hand, a reductionist and mechanistic interpretation of Newtonian physics, which assumed that the universe was like a giant autonomous clockwork, such that if we reduced it to its smallest parts and understood the initial conditions and causal relationships between those parts we could “reconstruct” that universe or parts of it to our own advantage through engineering. This Newtonian framework could then, according to economists and other positivist social scientists, be carried over onto society so that it too could be “reconstructed” through *social* engineering, with the difficult question of *who* was to do the engineering usually left vague, if not completely unanswered. In any case, for the scientist, it was not to be God or any of his earthly representatives who would conduct any part of this cosmic ‘orchestra’.

On the other hand, this assumption was accompanied by the necessary Cartesian belief in the separation of the mind and body, this having to do especially with the relationship between the “objective”, “value-free” scientist, and the social and/or natural reality under study. It was seen as necessary that scientists and engineers be untainted by religious or other dogma and *apart* from the reality under study, though their discoveries might allow them to seek to control it by exploiting its basic laws. Humanists and humanistic social scientists, while seeking objectivity, have never believed themselves to be *apart from* the reality they were studying, and now quantum physics believes that this is not even true for those studying the elements of nature, particularly at the sub-atomic level, and probably at larger levels as well.² In other words, in the quantum world scientists and engineers are now seen as a *critical* part of the physical reality they study, with their thoughts and actions potentially altering that reality. How much more would this be true for social scientists, especially economists, who are advising governments and businesses all over the world?!

At the same time, the 18th-19th century economic theorists were living in a smaller scale society and the relatively under-exploited nature that existed at that time. Their assumptions were thus based upon different kinds of human relationships and a different kind of environment. And furthermore as we question the extreme Cartesian belief, as stated above, we may now suppose that the effects of those assumptions (and the resulting theories), themselves, have contributed to a change in that reality, making it something quite different in the 21st century! Thus, those assumptions may have been useful then but are clearly less supportable today. So from Protagoras’ wise saying that “Humans are the measure of all things”, we arrive at the 18th and 19th centuries and beyond to the assumption that, “Money (or Newtonian science) is the measure of all things”, and *in the process have pretty much lost all idea of the human measure*.

In other words, matching the well-known structural crises of the economy and the environment, there is also a philosophical crisis related to how we think about and conceptualize these crises, for, indeed, ‘the body and the mind’, as well as all things in the universe,

are now seen by quantum physics to be connected. This philosophical crisis ranges from how to address the rather limited epistemological axioms of positive science, especially in the social world, to questions about how we are now to understand ourselves collectively, and how we are to set and evaluate goals for a future that would be free from these structural crises. Specifically, what are human needs, and how can they be satisfied? How can we best organize society and establish systems of social control to meet these needs? How do we establish moral values for behavior? In what sort of social environment can we begin to answer these questions? etc.

2. The Economic Crisis

Looking first at a key assumption of mainstream economic theory, it has been obvious for many years now that, among other things, the so-called 'free' market system composed of isolated decision-makers cannot (automatically) solve the imbalance between production and consumption. Nor could it ever; 17th and 18th century economic theorists, working within a deterministic Newtonian framework, couldn't have appreciated this. Looking beyond economics, we might find quite a number of different understandings of such an assumption. For example, in physics it would appear that the idea of a system composed only of *isolated* elements would be something close to entropy (or the end state of our solar system some billions of years from now). In literary history the outstanding example we could find of the detached decision-maker, aside from the occasional hermit, would be that of Homer's one-eyed Cyclops, a primitive creature who lives in a cave isolated from all other creatures and with no sense of the meaning of community, laws or society. As for the biologist, who works with *living systems*, such an anarchic situation would likely signal a spontaneous evolutionary move to create greater order, as a logical response to such a state of crude disarray.³

Indeed, in an economic system, a truly free market would be anathema to most businessmen, and they would likely seek to establish order by reducing the number of independent decision units through merger and takeover, which is exactly what has happened historically. Thus, in today's reality the term 'free market' has come to be used throughout the world as a cover for this actual process of consolidation, where larger economic units move in to take over smaller ones, particularly in less developed economies. To what extent economists themselves are aware of this deception is hard to tell, given that they are working within a 19th century idealist (mathematical) framework that 'proves' that such a market system is 'efficient' in this respect.

At the same time, larger production units can take advantage of economies of scale, while also exerting greater control over the conditions of the market. One long-term result of this has been a chronic tendency to overproduction in the industrial countries (the system produces more goods than consumers can consume, especially with the income available to them). As a consequence of this trend there has been a tremendous effort by capital, for over a century now, to interfere with the free market by stimulating an increase in consumption through any means possible, i.e., through advertising, marketing, loans, credit cards, and even architecture and art, etc. rather than reduce its profitable production.^{4,5} One by-product of this effort was and is to distort the psychology of people, especially young people, with the

idea that only wealth and the consumption of goods could define the successful (and happy) human being. I need to stress that this portrait of success is the product of a **colossal human effort** by powerful commercial, industrial and financial interests, with considerable help from psychologists and artists, and **not** some inevitable ‘natural’ evolution of the social system, as is assumed in the mechanistic ontology of economic thinking.

The thought that a better distribution of wealth would give even a partial solution to this problem inspired Henry Ford (only briefly) in the 1920s. Economists and political leaders were also inspired (though not ultimately persuaded⁶) by this thought during the application of Keynesian theory in the decades from 1930 to 1970 in America, and in a more substantial form in the welfare states of Europe. However, with the rise of monopoly capitalism and its ‘globalization’ over the course of the 20th century, along with its new (old) ideology, neo-liberalism where privatization and the market are sacred, this option is no longer considered ‘fashionable’.

Another (unfortunate) result of the inability of the market to maintain a balance between production and consumption has been the shifting of capital from production (the real economy) to the financial sector (banks, stock markets, and other forms of gambling) for speculative investments, in spite of the increased risk associated with such investments. This form of investment is also accompanied by a certain mentality, that of the gambler, who is totally unaware and unconcerned with the broader human and social effects of his activity. To quote Marx, who is describing a similar situation in 19th century France:⁷

[They] . . . get rich not by production, but by pocketing the already available wealth of others. In particular there broke out, at the top of bourgeois society, an unbridled display of unhealthy and dissolute appetites, which clashed every moment with the bourgeois laws themselves, wherein the wealth having its source in gambling naturally seeks its satisfaction, where pleasure becomes crapuleux (debauched), where gold, dirt and blood flow together. The finance aristocracy is nothing but the resurrection of the lumpen proletariat at the top of bourgeois society.

“Every time a speculative bubble bursts, the absurd ‘logic’ of the basic assumptions of neo-classical economics and of capitalism becomes more obvious, and a more rational organization of the economic system with a more equitable distribution of wealth, more necessary.”

These capitalists are even more morally indifferent than the industrial capitalists, who must at least be somewhat concerned with their labor force, to say nothing of their customers. Given this casino atmosphere, the more profitable these investments are, even if only temporarily, the greater is the imbalance of wealth that is created, which tends to exacerbate the problem of under-consumption – overproduction, etc. As a result of this mentality, we also see a chronic tendency towards an over accumulation of capital among the wealthy.

The system becomes even more unstable, as profit is increasingly based on lending (i.e., for consumption and not for productive investment) and on fly-by-night speculation. Every time a speculative bubble bursts, as we see all too frequently, the absurd 'logic' of the basic assumptions of neo-classical economics and of capitalism becomes more obvious, and a more rational organization of the economic system with a more equitable distribution of wealth, more necessary.

3. The Environmental Crisis

The environmental crisis, in the meantime, is much more serious than the economic crisis, which can in time be reversed, whereas the changes that are occurring in nature are likely to become increasingly irreversible.⁸ Capital and the neoclassical/neoliberal approach for the most part ignore this crisis, believing, it seems, that, "Après moi le deluge" (after me the deluge), or, in another version, that science and technology will in time solve all such problems. It should be emphasized that most economic theories of the 18th and 19th centuries saw nature as an open system, which one could exploit *ad infinitum*, such that it enters economic calculations as *income* and not as *capital*. And this assumption still characterizes capitalism, but also, unfortunately, to a large degree, 'socialist' systems, insofar as they are also directed to infinite growth, with the same deleterious effects on the environment. Today, more and more people are coming to understand the limitations of this assumption, except, unfortunately, for most corporate executives and mainstream economists, whose ideology inhibits them from acknowledging the problem. As for politicians, journalists and many scientists, we hear them repeating the 'mantra' of growth, as if this had nothing to do with the environmental crisis. Part of this mentality is the belief (and desire) that we could solve the problem of inequality only through growth, rather than through a radical change in the socio-economic structure.

Here we are reminded of the Greek myth of Erysichthon. In his insatiable desire for power and control (not unlike that of today's bankers, technocratic planners and politicians), he was willing to sacrifice nature, represented in the myth by his cutting down of the forests, including the sacred tree of Demeter, the goddess of the harvest or more literally, "Mother Earth". As punishment he was cursed with a hunger so ravenous that he ate everything in sight . . . until he finally ended up eating his own flesh! We can only hope that today's corporate and political leaders, and economic theorists will realize their folly before they have consumed everything in sight, they, themselves included.

But to solve the global environmental problem would require some sort of full and genuine democratic socio-political cooperation, something that has only been rarely seen in humans except among hunters and gatherers. The moral emphasis on 'possessive individualism', which we have also inherited from the 18th-19th century, along with its predatory competitiveness, does not serve us well with respect to this question.⁹ Also, the over accumulation of capital and the ever greater emphasis on large scale corporations, technology and financial entities that follow from this, do not allow much freedom for more creative and flexible thoughts and actions in the dialectic between humans and nature. Nature, however, has

limits beyond which Homo sapiens cannot survive; one can only hope that we will recognize this critical problem before it is too late.

Meanwhile, there are, of course, many, including economists, who are concerned with environmental problems and who offer thoughts on solutions and strategies for the future.¹⁰
¹¹ The most important thing to realize is that it is absolutely necessary to reorient most of the assumptions about political-economic systems, about society and nature that we have inherited from the recent past when capitalist-directed science and technology flourished unabated.

“Social theories based on a mechanistic Newtonian-Cartesian science and those that ignore human consciousness and intention, do great harm in their application to society.”

4. The Philosophical Challenge

The first philosophical assumption that we must question is that nature and society are the same. We need to understand that social theories based on a mechanistic Newtonian-Cartesian science and those that ignore human consciousness and intention, *do great harm in their application to society*. Without humanity and ethics, both missing in natural science, these theories and the mindset that accompanies them tend towards a fully controlled ‘brave new’ technocratic society. This leads to increasing despair and nihilism in humans where the only ‘freedom’ is to be found in the phantasmagorical reality of television, on the one hand, and consumerism, on the other.^{12, 13} The future, if we are to survive, must be built upon love and cooperation, on equality, on respect for nature, and on a substantial reduction in the demand for material goods, especially those that consume large amounts of energy to produce.¹⁴ This implies a qualitative shift towards a balance between the physical to the spiritual needs of humans, which in turn will require a significant change in the education of the young and old alike, so that we can learn to live as self-determined people and not as slaves to advertising and technocracy.

“Economics would like to see itself as a natural science (physics, preferably) being applied to society, and thereby assume that human consciousness and intention play no role in the events that are observed and measured in the social context.”

It is worth reflecting here on a statement by Robert Kuttner, co-editor of the magazine *American Prospect*, as referred to in an article by Eamon Javers and Jim VandeHei,¹⁵ in support of the massive amounts of *public* money that must be given to the plutocrats in order to “solve” the financial crisis in America and Europe *that they themselves have created*. “This,” says Kuttner, “is not about ethics, it is about economics”. So if you believe Kuttner, economics is without ethics, is amoral, with the result that while economics can distinguish between rational and irrational, *it cannot distinguish between moral and immoral!* (This is

quite apart from the thoughts and actions of any specific economists; it is simply that they must find moral inspiration outside of their science, if they are interested).

Following Democritus, however, this moral indifference requires an explanation, and there appear to be several reasons. First of all, economics would like to see itself as a natural science (physics, preferably) being applied to society, and thereby assume that human consciousness and intention play no role in the events that are observed and measured in the social context. Actually, this is only partially true, because economics does assign consciousness and intention in the form of the “economic man”, a caricature of the human in the form of a ‘robotic’ rational man who thinks and acts in total isolation from his fellow human beings. Thus, moral concerns would play no role in such a construction.

“Human societies are based upon consciousness.”

Secondly, in a related way, as a natural science, economics is obliged to be ‘value free’, in part a residue from the (still) unresolved conflict between the spiritual and the material, in this case between science and religion.¹⁶ That greed, envy and fear, as mentioned below, are implied moral values in this construction is left unexamined for obvious reasons.

Third, when Keynes (and Roosevelt) threatened the orthodoxy of mainstream economics in the 1930s, with a macroeconomic theory not built up from reductionist individualism, there was a small crisis in the science of economics. There was also a political crisis of sorts, as the moneyed classes rallied to cut back on the New Deal after the elections of 1936, thus sending unemployment shooting back up again. World War II interrupted and temporarily resolved this crisis by creating a military Keynesianism, which continues until today in much of the capitalist world.

Meanwhile, the McCarthy witch-hunt of the 1950s in the United States sent academics scurrying for cover. That is, any suggestion of government interference in the economy, as recommended by Keynes and carried out by Roosevelt, might be construed as ‘creeping socialism’. Most economists gladly (or reluctantly, as the case might have been) returned to the micro-economics based orthodoxy, and protected themselves with a wall of (mathematical) abstractions, often with little relation to reality, in order to prove their value-free ‘innocence’, a tendency that had earlier caused Keynes to say that:

Too large a portion of recent ‘mathematical’ economics are mere concoctions, as imprecise as the initial assumptions they rest on, which allow the author to lose sight of the complexities and interdependencies of the real world in a maze of pretentious and unhelpful symbols.^{17, 18}

However, human societies *are* based upon consciousness. The human mind contains logical, emotional and moral dimensions, and human actions that produce the social structure are always guided by these three parameters. Therefore, when Marshall celebrated the separation of economics from moral philosophy in London at the end of the 19th century, he heralded the growing irrelevance of economics to human society, *except*, of course, to the extent that its theories (and ideology) are continuously *imposed* upon society through

education and behavioral programs and policies. But, insofar as this is true, economics itself, becomes a part of the *social construction* of reality, and is no longer only theorizing about it.

In the final analysis, Marshall also heralded the likely disintegration of the capitalist system, if not human society, itself, as we now observe the degradation of nature that has followed. Unfortunately, it seems that most mainstream economists and businessmen then, as now, have not been able to appreciate that *no society could long survive without emotions and ethics*. This is what Plato meant with his saying that, “All science without justice and the other virtues must be seen as mere cunning and not wisdom”. But that was at a time when science was still a branch of philosophy, unlike today when philosophy is considered by many scientists and engineers to be, at best, an interesting pastime.

Thus, a key philosophical challenge is to bring virtue or moral philosophy back into science. Not that science, especially economics, does not contain a moral and emotional framework; simply it is not very obvious, or discussed very much, given its claim to a ‘value-free’ status. Thus, this third challenge, which is closely related to that framework and, ultimately to the other two crises, is to define the place or role of the human being (including the scientist) in the socio-economic system. For the positive sciences, which have largely replaced religion and philosophy in social thought, the human being is little more than a cog in the Newtonian mechanistic world. In this world there is no place for emotion and ethics, two of the major non-material dimensions of human existence.

For economics this is especially important, since there are, indeed, emotional and moral dimensions implicit in economic theory. Here we refer to *greed and envy*, along with the necessary *fear* (of others) that accompanies such a value system as a means of social control. In this value system the mind must be focused on *cunning*, which, in this world view, is the only ability that humans need to be concerned about in life, a life that for mainstream economics, especially, is pretty much like a game of ‘poker.’ Thus the wiliest will be the most successful in life, and will represent the ‘ideal man’ in this philosophy, despite the degraded position assigned to him by Plato.

If economics, and science generally, did not play any significant role in society, this characterization of humans would simply be sad. But economics, and the 18th-19th century liberal ‘philosophy’ of the merchants, bankers and industrialists that still accompanies it, along with modern technology, largely determine our lives today. They restrict our daily lives to an inordinate degree, especially if we are unable to understand how crucial is their influence on our thoughts, both practically and theoretically.

This leads to the question about what should be, ultimately, the role of the human being in a more philosophical social vision. If Protagoras was right in believing that neither science nor religion but *the human being* should be the measure of all things, then how should we define humans and their needs? How should we define human happiness, especially if we believe that this is the ultimate goal of science? We should be able to improve on the strictly limited (and fabricated) *Social Darwinist* definition of humans that we have inherited from science, economic theory and political ideology of the recent past and, more specifically, the interpretation of this ‘tradition’ that characterizes contemporary socio-economic doctrine.

And, finally, could a deeper understanding of humans help in the solution to the other two crises that bedevil us so much today?

5. Happiness Then and Now

Two hundred years ago only a few people possessed the wealth and luxury that are now associated with modern living — whereas today. . . ? Of course, there is a substantial middle class in the developed countries that enjoys the material benefits of modern society, a class, which unfortunately is dwindling under the influence of the ‘New World Order’. This is true even in the U.S. where the median family income has not increased at all for more than thirty years, and has not actually declined because there are so many more women working now.¹⁹ But beyond this there is a worldwide alienation in this middle class that is not consistent with the material wealth and amenities that they enjoy. (On the other hand, does anyone truly believe that the very wealthy are happy, in spite of the persistent advertising about the ‘rich and the famous’ we see in the media?)

So, one must ask, with all the economic development and the evolution of science and technology in the last 200 years, what are we now able to offer to modern humans? First, throughout the whole world more than half of humanity has witnessed from very little to almost no improvement in their material lives during that time. Clearly, many people benefit from the wonders of medicine, and a minority enjoys progress in the use of energy, communications and transportation, and general comfort in everyday life. But is this minority happier now, even with these improvements and amenities? Perpetual war, crime and other sociopathic indices, e.g., divorce, drug abuse (including caffeine, nicotine and alcohol), prostitution and pornography, as well as bribes, kickbacks, patronage, fraud, theft, etc., which are common phenomena at every level of life today, altogether reflect a general collapse of the moral structure in today’s society. These findings would cause one to suppose that, no, today’s humans are not happier, despite the apparent progress in science and technology. And research that addresses directly the phenomenon of happiness draws the same conclusion.²⁰

We have no measurements of happiness from 200 years ago, although certainly there was much misery associated with the poverty that characterized the lives of most. Today’s worldwide poverty, meanwhile, still deprives many people of the basic needs for adequate food, clothing and shelter, and more than that there is still a general lack of some sort of security in life and the assurance that the few things that people have will not be taken away in one fashion or another, at any time that suits the ideological demands of the system — as we see in the recurrent financial crises that mark the history of the modern capitalist world. Of course this deprivation could lead to forms of sociopathic behavior then as now. But shouldn’t we have solved these problems by now? In any case, shouldn’t everyone be happier now? *Wasn’t this the promise of science and technology and free market capitalism in the 19th century?*

6. Economic Theory and Happiness

In a sense, poverty and insecurity should have been eclipsed long ago; because, for nearly a century now *we have a production capacity that could satisfy most of the basic material*

needs of all people. However, by the time we arrived at such a capacity both the politico-economic system and economic theory had become trapped in a severely limited perception of society and of human needs, as propagated by certain 18th-19th century philosophers and theoreticians. The result has been that 20th century corporate leaders have been ‘obliged’ to create (artificial) needs to fit this concept and this system of theory and practice. That is, the misery caused by poverty is an anachronism that requires an explanation, one, oddly enough, which is not far from the explanation for the unhappiness of the privileged few.

We start this explanation with a quote from Isaiah Berlin:²¹

The history of thought and culture is, as Hegel showed with great brilliance, a changing pattern of great liberating ideas, which inevitably turn into suffocating straitjackets, and so stimulate their own destruction by new emancipating, and at the same time enslaving conceptions.

We recognize here the basic dialectical insight of Heraclitus, as mentioned above, which Hegel and others have used to analyze the philosophical and socioeconomic systems of their time and ours. This dialectic refers here to the relationship between thought and behavior, between consciousness and being, between subjective and objective reality and even between conjectures and refutations, as Popper would have it. Kuhn has interpreted straitjackets as ‘anomalies’ that would lead to scientific revolutions, whereas Marx interpreted them as basic systemic contradictions that would provide clues for the next phase of human history.²² Thus, Marx, for example, began with an analysis of the subjective reality, i.e., the reality of ideas and thoughts, or the consciousness, that inspired the capitalist system at that time. This was a consciousness that made private ownership of the means of production sacred, that made workers selling themselves or their labor to those owners in order to survive seem natural, a consciousness that believed that everything, i.e., labor, nature, education, indeed, all of society, could be reduced to engineering, etc. Within a short period of time this consciousness resulted in the inescapable alienation of people, alienation from the products of their labor, from their communities, and from each other. Furthermore, the ideas that promoted this alienation, could, according to Alan Macfarlane, have begun as early as the 14th century in England.²³

Marx, however, did not start with Hegel, but with Epicurus. His doctoral dissertation was an analysis of the argument between Epicurus and Democritus about whether society is deterministic in the same sense as nature, that is, if there are any mechanisms that allow the prediction and control of society in the same way that current Newtonian/Cartesian science and technology seek to control nature. His conclusion was that the humanist Epicurus was right, that there are *no* deterministic social mechanisms, and from there came his respect for the dialectic and for the human participation in the construction of social reality. He was quite modest in his expressions about what exactly would be the next (socialist) phase of humanity, despite the ‘certainty’ that some of his followers showed in later writings, as they sought not to exclude themselves entirely from the deterministic ethos of the age.

With these considerations we can clarify some of the basic problems of western society today. Capitalism has liberated the enormous human resources that were hidden beneath the

various forms of despotism that lasted for 2000 years following the end of ancient Greek civilization. This liberation occurred in quite a 'natural' way as a result of the increase in commerce in the Mediterranean, aided in turn by the Renaissance that uncovered manuscripts preserved by the Arabs which revealed ancient Greek science and philosophy. The growth of commerce prompted the creation of industry and technology, which in turn contributed to an increase in the production of goods and the further development of trade, by now on an international scale.²⁴

The industrialization and urbanization that followed created a huge productive capacity, dependent, however, on a political-economic system based on the so-called free market and on an economic theory that rationalized it by focusing exclusively on production and investment for profit. (This emphasis on endless material production was true even in the communist Soviet Union).²⁵ Unfortunately, however, it ignores any human needs beyond those related to money, profit seeking and its mathematical theorization. Thus, if a need can be combined with a financial return, the system will offer an appropriate product or service; if not, it will simply not be met, at least not within the dominant politico-economic system. In theory and practice this system allows, though only grudgingly, a public sector to provide the necessary social and physical infrastructure to satisfy significant unmet needs, especially if their satisfaction would improve the productivity of the system in general. But again this is allowed only if it does not compete with the private sector. It is important to emphasize in this respect that with neo-liberalism in recent years the private sector has expanded enormously, while the public sector is increasingly being used as a conduit to channel public funds into the private sector, usually for excessively profitable activities.²⁶

When the system arrived in the late 19th century with a production capacity that could soon have satisfied the basic material needs of everyone, especially in the industrialized countries, and over time throughout the rest of the world, it did not follow the logical development of doing so because it was not 'profitable'. All of the subsequent evolution of capitalism and of mainstream economic theory since then has been characterized by this outdated 'logic'. Thus, in the less developed countries of the Third World colonial capital has sought cheap raw materials and cheap labor, and subsequently, to the extent possible, new markets (consisting mostly of the privileged few), which on the whole aids more in the underdevelopment and the continued deprivation of basic needs in these countries.²⁷ We must exclude, of course, certain countries of Asia, particularly China, which have to a large degree freed themselves from this colonial syndrome and where now the local ruling class, itself, has taken on the 'onerous' task of exploiting its own people in the name of 'development'.

During the same period, in the industrialized countries themselves corporations have learned to manipulate consumers' emotional and moral needs to increase consumption, so as to not reduce the production that was the source of their profit. In a sense it might have been more logical to increase the income of workers so that they could consume the increa-

"Capitalism and mainstream economic theory and even liberal ideas about democracy are trapped in the 'straitjacket' of thought from the 19th century."

sed production, but this would have reduced profits. Caught in this contradiction, they have turned, on the one hand, to new forms of organization and technology to reduce production costs, ignoring the psychological and physical toll on employees and workers, as immortalized in Charlie Chaplin's 'Modern Times', and on the other, to advertising, credit, etc., as already mentioned, to increase the consumption of goods, including often those that are largely unnecessary, providing they yielded a profit. Meanwhile, the evolution of a technology that displaces workers further reduces purchasing power in the market. The combination of all these choices has contributed eventually to the current global socio-economic crisis.

The scientific, artistic and emotional manipulation of workers and consumers has reached a very sophisticated level today, forcing them to engage in a frantic but meaningless 'rat race', in which they work harder and longer hours to earn more money to buy goods they think they need, without a thought given to how these needs were created in the first place. Capitalism and mainstream economic theory and even liberal ideas about democracy are trapped in the 'straitjacket' of thought from the 19th century, and are unable to help the workers, citizens and consumers to free themselves from this impasse.^{28, 29}

7. 'New' Perceptions of Happiness

We know that in large social systems there are many unintended consequences of people's actions: we think we're doing one thing but it turns out that the effects are not what we expected. The feedback loops in large systems are very slow moving and often interpreted in terms of outdated conceptions, so that reality usually runs ahead of thought. Thus, it has taken until now for more and more people to understand that the 'liberating' theories and ideologies of the 19th century do not fit the realities of the 21st. There is now an effort to bring science closer to real people and real needs. There are thousands of students and professors of economics who are looking for new, more humane 'reality based' economic theories, reflecting today's circumstances.^{30, 31, 32} (See also www.paecon.net)

At the same time, in the larger industrial society there are millions of people seeking to satisfy non-material needs by fleeing the modern sector and the frenzied competition that characterizes it, living with smaller cars and simpler houses and consumer goods. They are seeking to reduce environmental pollution by using more 'friendly' technologies, and to eat fewer processed foods containing toxins from pesticides, fertilizers, etc., and generally to avoid the pressures for the 'good life' promoted by the media. In other words, they are seeking to create on a smaller scale a more moral and emotionally satisfying socioeconomic system to replace the large scale one that has now become so immoral and so irrational.^{33, 34, 35} This is not, of course, to suggest in any way that the poverty-stricken people in the Third World should be denied access to those basic material goods and services that are so lacking there, to a large degree proportional to their over abundance in the First World.

It is not the first time, however, that people have realized that their society could not allow the fulfilment of important non-material human needs. Here we must mention one of the earliest and most important of such people, Epicurus, who left the city, not to avoid consumerism, but to find the essence of human life. Although the school of Epicurus lasted

much longer than all the schools of the other philosophers, his thoughts have been distorted and his concepts perverted more than those of any other philosopher. Why? Because Epicurus tried to free humans from every sort of unessential physical and psychological need that might derive from the socio-political system. This has not made him popular in any system of power, anywhere, ever.

This is because people in positions of power are always looking to devise emotional and ethical justifications to legitimize their power. The Greek word for (political) power is 'ἐξουσία', which means literally 'outside the essence'. Insofar as the powerful are usually 'outside the essence' they seek those justifications outside the realm of the human and outside the essence of society, that is, in the realm of the metaphysical and in mechanisms beyond the human. When Nietzsche said, "God is dead", he meant that the metaphysical symbolic system of religion had lost its grip on humans because it had been replaced by science. Now unfortunately, following the idea of the dialectic, science, or at least the language of science, is increasingly used for similar symbolic purposes (of 'mystification'). Thus, for many people, including almost all businessmen, and the politicians who support them, as well as many economists, *economic theory and science generally play to a significant degree the social role of a metaphysical symbolic universe that legitimizes the power of the existing status quo.*³⁶

Meanwhile, there are many contemporary people, who, like Epicurus understand that modern society pushes one beyond and outside the essential, and that society, therefore, needs to be redefined. Such an effort requires reflection, time and quiet, something not to be found in the city. Hence, the movements mentioned above, which have different names: 'cultural creatives', 'postmodern', ecovillagers, transition towns, 'harmonization movement', even Epicureans, etc.^{37, 38, 39, 40, 41}

8. The Philosophy of Epicurus

How could Epicurus assist current Epicureans? What was the philosophy of Epicurus?⁴² A basic presupposition of Epicurus was that happiness begins at the level of human beings, and that they should be happy here and now (and not after death, for example). To be happy, one should avoid physical pain and mental distress (what today we call stress). But, according to Epicurus, one should seek to avoid physical pain and mental distress *through reason and logic and not through gluttony and greed*. That is, what all the agitated critics of Epicurus have done for two millennia now is to distort the meaning of 'ἡδονή' (hedonism) and to slander him by giving a totally opposite meaning to the word, all based on a big lie. *For Epicurus any pleasure of a given moment that would bring unhappiness to the next, either to one's self or to others, should be rejected*. Thus, his true maxim was frugality, simplicity in food, in drink, in housing, in clothing and sex, i.e., 'μέτρον ἄριστον' (measure in all things), *not* the current tendency to overeating and dieting, drug abuse and detoxification, overconsumption and over indebtedness, etc.

There is modern scientific evidence to support this philosophy. For drug dependence there is no need for discussion. As far as overeating is concerned, experiments with animals

have shown that less food contributes to health and longevity. There was an impressive study of American Navy pilots who were imprisoned in North Vietnam (where they ate only rice and vegetables) compared with their fellow non-imprisoned pilots, which showed that in a whole range of body systems the prisoners were healthier than their colleagues who ate the usual meals of the American people!⁴³

Epicurus believed that to avoid psychological stress, the most important thing was to avoid fear. He believed that all psychological stress begins with fear, and furthermore, along with Aristotle, that fear is the chief weapon of power. Epicurus believed that fear is rooted in the fear of death, so he tried first of all to relieve people of this primal fear. It was also for this reason that his philosophy was in continuous conflict with western religions over the centuries that followed. He did not believe – as was also true of Thomas Paine⁴⁴ and other deists in the 18th century – in gods that would meddle in human affairs (supporting one or the other side in wars, sporting events, etc.), either before or after death. He believed that if such were true, gods would be human and not divine, thus disarming the power of all the religions that threaten humans with punishment through exile, excommunication, hell, or whatever. The same is true for all forms of power that use fear to control their subjects. Indeed, the more a system depends upon fear to govern, including fear of the enemy, of terrorism, of crime, of torture and execution, and in general fear of the ‘bogeyman’, the further away it is from democracy, whatever label is used to define that system. Thus, Epicurus entreated his students to avoid the fear of God, the fear of authority and the fear of death, fears often generated by ritualistic and sociodramatic means such as staged terrorist events, the theater of violence in the mass media, overt demonstrations of power, victimage, mystification, etc.⁴⁵ but also the many writings of Kenneth Burke.⁴⁶

At the other end of the emotional spectrum Epicurus gave much importance to *friendship*, as he believed it was the most important basis of human happiness. He emphasized companionship, honesty, generosity, goodness and kindness to friends, along with prudence, self-sufficiency, serenity, simplicity and restraint. Because he appeared to give little importance to kinship or to society as a socially constructed reality, and as he believed in and supported the atomic theory of Democritus, he was compelled to find a social explanation for “the temporary association of individuals within larger systems characteristic of nature, where ‘everything flows’”. There may at some time be found a quantum explanation to complement the psychological importance we give today to the attraction between people that results in temporary communities or groups. Epicurus, however, offered friendship as the philosophical explanation for the role of such attraction. And in his garden, friendship was extended to all: to women, slaves, young and old. There, associations relied solely on human volition, rather than on coercion, and hence the importance of friendship to maintain the sense of cohesion.

In this context, without fear, and with equality and freedom and with the search for happiness based on wisdom, logic and simplicity, Epicurus saw no place for glory, for success and fame, for wealth and greed, or for power and conquest. “*Λάθε Βιώσας*” (Live inconspicuously, unobtrusively): avoid behavior and ambitions that bring only banalities and mental

distress. Live life here and now, with simplicity and respect for each other, but with joy and happiness.

How ironic! Almost the entire evolution of humanity since Epicurus has gone in the opposite direction, especially with the rise of economic theory, individualism and the technological society, which have brought a culture of egoism, competition, conquest and arrogance, and with ultimate consequences that may well circumscribe significantly, if not conclusively, human life on our planet. So it is not surprising that so many people today are looking to implement the values of Epicurus, with or without his name. There are scholars in all disciplines who are turning their attention towards the human and the spiritual, seeking to find a more reasoned philosophical and scientific approach to the current social reality.

9. Maslow's Developmental Theory of Human Needs

One such effort (without apparent reference to Epicurus), starting nearly half a century ago was that of Abraham Maslow,⁴⁷ who sought to formulate a theory of emotional needs as they develop throughout a normal (non-pathological) person's lifetime. In his well-known "hierarchy" he sought, through his clinical work, to develop an empirical theory that was dynamic and universal. He claimed that the first needs, first in importance and time, were the *physiological needs* of humans arising during infancy: needs for food, water, warmth, etc. These are the basic material needs, and essentially the only needs incorporated in economic theory where they are expressed solely in terms of money. Mainstream economic theory offers essentially no theoretical guidance as to how these needs would be insured for all people. The free market system has certainly not succeeded in doing this even in the advanced industrial countries, as the past 200 years have shown all too clearly. Surprisingly, they were not even identified as needs in scientific discussions and indices of development, including in the United Nations, until fairly recently, and only after a long campaign by Mahbub al Haq.^{48, 49}

The second developmental need is the emotional need for *safety*, which is very important during the childhood years of human beings. It is the need for security, protection, stability, dependency, freedom from fear, anxiety, and chaos, need for structure, order, law, and limits, etc. It is a need that is satisfied primarily within the context of the loving family, *but which presupposes the security of the family in the larger society*. Again mainstream economic theory offers no guidance here. It is also a need whose satisfaction is undermined by the violence that is a daily presence in the media, even in children's cartoons. This violence serves broader political purposes by creating fear, often subconsciously, important for social control as mentioned above, but also necessary to justify the militarization of the global politico-economic system in which military armaments are the number one world trade commodity according to statistics provided by the United Nations.

The third need in human psychological development is the need for *affiliation or friendship* within a group, a very important need during adolescence when the child begins the search for autonomy. It is the need to belong somewhere outside the family, the need for loving relationships with friends, which will subsequently evolve into similar relationships with spouses, children and community. It is a need which could be satisfied through youth

groups and clubs sponsored by schools, churches and other associations for young people. Among other things the young could discuss the ways in which the need for affiliation is much exploited in advertising, which is directed increasingly towards adolescents. Teenage children have a critical emotional need to belong to a reference group beyond the family and will do almost anything, which in current society, television, cinema and, in general, advertising, suggest are necessary to belong to such a group.

Later, during the early developmental years of adulthood people have an emotional need for esteem, specifically for self-esteem and social esteem. The first is expressed as a need for power, achievement, efficiency, ownership, capacity, confidence, independence and freedom, and the second for reputation, position, fame and glory, dominance, recognition, attention, importance, dignity and respect. Maslow's theory has been much used in management seminars and workshops in relation to this need, though how it can serve to counsel employees involved in a rapacious, predatory system where only the bottom line is of importance, remains a mystery.

It was also a need referred to by Adam Smith as approbation, though his examples reveal his failure to appreciate how different life in mass society would be from what he was experiencing during his time. One unfortunate development has been that most of the economists who have followed Smith have reduced the basis of such praise (often clouded by envy) to material or monetary terms, disregarding other forms of emotional and spiritual satisfaction sought by human beings. Unfortunately, Smith justified the search for approbation on the grounds that it would encourage people to continue to "cut the trees and plough the fields", with all the disastrous results we see today in the environment and in human psychology.

In any case, here it appears that Maslow diverges from Epicurus and his canon to live inconspicuously and unobtrusively. Or could it be that Epicurus understood something that Maslow did not take into account, i.e., that it is very difficult if not impossible to find real (authentic) esteem in a large-scale society? This is certainly true in the mass society of today, as evidenced by inquiries made on this topic. Current surveys show that few people express satisfaction in their work, which is, for the most part, the place where one must expect the need for esteem to be satisfied.⁵⁰

Parenthetically, one might add that the Soviet system also ignored these emotional needs in defining the new socialist world. Material needs were guaranteed, but were ultimately understood as they were defined in the capitalist world. Thus, continuous increases in consumer goods and the necessary increases in industrial production that this entailed were to be the defining purpose of the new socialist society, with the same resulting environmental problems that have marked the history of capitalism.

At the same time, development was seen as an engineering problem in the same mechanistic framework as employed by the capitalist system, and was to be realized through central control, in this case the state instead of the corporation. Work, while guaranteed for everyone, turned out to be the same mindless process as portrayed by Charlie Chaplin and formalized by Taylorism under capitalism.

Thus, esteem needs, which can only be realized through worker participation at every stage in the decision-making process, were as frustrated under Soviet socialism as under capitalism. Joshua Horn⁵¹ described the long painful process that worker participation entailed, based upon his experience in the post revolutionary medical system in China. But, if applied universally, this would have slowed down the accumulation of consumer goods that was to characterize the new utopia. Thus, apparently for this reason, it was rejected as 'inefficient' in the Newtonian framework that was employed in the centralized Soviet planning system.⁵²

"The academic and business world are still largely dominated by the mechanistic Newtonian vision of reality and the Cartesian separation of the spiritual and the material."

Meanwhile, the (illusion of) glory, much sought after by politicians and those who generally have a passion for money and power, cannot satisfy such needs. Is it perhaps that Epicurus believed that only in small-scale communities could one satisfy the need for esteem? Epicurus did not live in our present mass society, but he must have realized that it was necessary for people to know you well, and to truly respect you, so that you, yourself would realize that this was genuine esteem. And is this perhaps why so many people are now creating smaller communities in order to live a more fulfilling life?

At the final stage in one's emotional development, Maslow identified a higher need, the need for *self-actualization*. This is the need to become more and more idiosyncratically everything one is capable of becoming, from an ideal parent to an athlete, musician, carpenter or whatever. Normally, this need is met only very rarely in our contemporary society, according to Maslow, on the grounds that, apart from very exceptional people, most would have had to satisfy all the other developmental needs first in order to reach this level, and this would occur usually only after the age of fifty.^{53, 54}

Indeed, Maslow's hierarchy is characterized by the concept of 'prepotency', which means that it is an interdependent system where lower needs must be generally satisfied before higher needs even become relevant. Hence, ordinarily, if a lower need is not satisfied at the appropriate age it could very well remain dominant and prevent the emergence of higher needs later in life. Thus, if during the years of infancy persons have not satisfied their need for food, these people will tend to remain psychologically at this level, and food will persist as an obsessive need throughout their lives, inhibiting the emergence of other higher needs. The same applies to the need for security in childhood, or friendship and affiliation in adolescence. If any one of these needs is not met at the appropriate age, it will tend to persist as an unmet psychological need throughout a person's life and block the emergence of later needs for esteem and self-actualization.⁵⁵

With this in mind, the seemingly strange and erratic appearance of children's psychological needs, or lack of emotional intelligence according to Goleman,⁵⁶ in adult populations is explained. Different people have stayed at different stages in their psychological development, and hence the emotional immaturity characteristic of a significant proportion of the adult population, especially, the male need for power, perhaps because childhood safety

needs were not satisfied. And one reason for this is that socioeconomic conditions plus the lack of philosophy throughout the educational system, throughout science and throughout (the technological) society in general, do not give attention to normal psychological development. That is, if we want people to be happy we must at some point put emotional and moral development alongside, if not ahead of economic growth, which, if we did, would cause a tectonic shift in the current scientific understanding of what is important in human life.

Meanwhile, it is not that this shift has not already started to take place. Since the time of Maslow, there has been an enormous amount of research on human happiness and well-being, or eudaemonia, as the Greeks referred to it. Neuroscientists, psychiatrists, psychologists, geneticists, philosophers and even physicists have been conducting research on every facet of human well-being. Much of this research has been summarized recently by C. Robert Cloninger in his book, *Feeling Good, the Science of Well-Being*,⁵⁷ which also includes his own research on the multi-dimensional, including spiritual, characteristics of well-being. Unfortunately, the academic and business world are still largely dominated by the mechanistic Newtonian vision of reality and the Cartesian separation of the spiritual and the material, and where even basic physiological needs have only recently been recognized as worth reporting alongside GDP, per capita income, etc. It is for this reason that we must struggle to make known the insights of Maslow, Cloninger, and many other scholars who are working to incorporate the *total* (spiritual and material) human being into our philosophy of science and society.

10. What Can We Do To Save Humans With (and from) Science?

We must appreciate that Maslow's hierarchy is *not* a deterministic theory in the Newtonian sense, nor is it expected that people reading about his theory would not be affected by it, as Descartes would have imagined. Therefore, the idea of prepotency can be utilized and then overcome through reflection on the hierarchy during adulthood. Just knowing about it may free persons from its hold, in the same sense that physical reality in the quantum world may be altered by scientists who are observing it.

Maslow, in the meantime, adds two more needs outside the prepotency framework: cognitive needs and aesthetic needs. These needs appear in all societies and all epochs, and are probably the key thing to examine if we wish to extract ourselves from the impasse of our present existence. To create a better social system we must first understand the problems in the current system and then be able to envision, think about, and generally create an image of a new social structure.

Thus, Maslow's developmental theory may be used in two ways:

First, it may be used as an approach to individual psychological therapy as part of a quest for personal well-being. Here it can be used to identify inadequacies in psychological development arising from unmet needs during infancy, childhood and adolescence that constitute obstacles to satisfaction of esteem and self-actualization needs later in life. This is something which most of psychological therapy is directed towards, in any case, either

within similar or differing theoretical frameworks, including that of Dr. Cloninger, who has explored the need for cooperativeness and self-transcendence as necessary prerequisites not only to individual well-being but also to social well-being and, in the long run, the survival of our species.

Secondly, and equally important here, we must talk about the socioeconomic implications of Maslow's theory, and about the need to institutionalize, in the sociological meaning of the term, the satisfaction of these needs at the appropriate time in the emotional development of all members of society. Thus, our fixation on efficiency, productivity and growth in the material realm must give way to concern for growth in the emotional and spiritual realm. Instead of adding endless numbers of gadgets and widgets, especially of the military sort, we must seek to add more healthy and emotionally mature human beings. Epicurus' insights into happiness should also help to liberate us from this overbearing material realm, with additional untold benefits in our effort to stop degrading the environment (and each other).

Thus, economic theory must be directed to providing a minimum of food, clothing and shelter for all members of society, with the assurance that women (and men) will not be degraded socially for their absence from the "productive" sector during periods of early childhood development. The same requirement must apply to each stage in the emotional development of all persons such that the satisfaction of their need for security, love and affiliation is embodied in social institutions directed to that purpose. Here we must emphasize the importance of protecting the family where such needs are first and best satisfied, which would mean allowing flexible work schedules and avoiding punishment for either women or men who are engaged in this critical social function. At later stages, when esteem needs are relevant, work must be designed as an end in itself, and not just as a means to increase production and/or profit making. Obviously, questions of productivity and efficiency cannot be ignored in the work place, but they must be kept in perspective, not as ends in themselves, but as means to the greater well being of the overall population. Again, Epicurus, as well as the serious problem of environmental degradation, should help us to maintain a proper perspective on how much and what sorts of production of material goods and services are important to society. Finally, economists, themselves, will have to learn to arrange the numbers so that these radically different social goals can be achieved. It should be both a challenge and a great satisfaction as they relearn their science in the service of humankind, serving Apollo, the god of light and healing instead of Ares, the god of war.

Among other things, this will require a renewed understanding that all knowledge is relative. What we believe as true today may have been either unknown or fantasy yesterday, and may be either a falsehood or, more likely, only a partial truth tomorrow. This understanding of relativity has been increasingly more acceptable to science since the time of Einstein, Heisenberg and Bohr,⁵⁸ and in general has always been more or less known in the humanities and the arts. Indeed, the social role of art is to experiment with reality, opening prospects for other possible realities, either through criticism of the status quo, or through images of another, better reality.^{59, 60, 61} If ordinary people and even more scientists begin to accept the relativity of knowledge with all its implications, as Berlin indicated above, and to *know when liberating ideas have become suffocating straitjackets*, then we can begin to build a better

society. This is not, of course, to adopt the extreme relativist (often postmodern) position that implies that there is no such thing as true knowledge, and that, therefore, nothing matters. Newtonian physics has not been thrown out because of quantum physics; it still occupies an important, though now more limited position, which is the way of all growth: the more we know, the more we realize what we don't know.

As mentioned above, we live with a number of scientific and socio-political ideas from the 18th and 19th centuries. The liberating ideological and theoretical ideas of this era were the product of the efforts of merchants and industrialists to be freed from the control of landlords and kings, who claimed that they ruled with the blessing of divine right. Even the U.S. Constitution extended the idea of democracy solely to people with property! Only after prolonged struggles did workers acquire voting rights, and women only in the 1920s, and for blacks in America only in the 1960s, that is, just a few years ago! In spite of this, an American journalist has described the current U.S. system as still little more than a 'representative oligarchy', which is not far from the reality in Europe. If you look at the cost of elections around the world, for example, you will understand that only the rich or 'friends' of the rich, that is, of the oligarchy, may seek to become elected to higher political office. Many social scientists still insist on calling these systems 'democracies', disguising reality with such "Orwellian" euphemisms in their 'scientific' analyses.

Mainstream economic theory is even more disingenuous. It speaks of a 'free market' system that might have existed at some point in the 18th or 19th century before the inevitable effects of competition started producing winners and losers and 'the big fish began to eat the small'. The accumulated effect of these economic forces has produced ever fewer and larger firms, particularly in the developed countries and by extension in the rest of the world, as competitive capitalism has evolved into its present monopoly form.⁶² The term 'free market' is a euphemism that obscures, among other things, the economic disparity between developed and less developed countries, a disparity that allows monopoly capital to enter freely into the less developed economies and pillage their resources, as well as their means of production and distribution, creating a permanent dependent status for these countries. It also obscures the ability of these few companies to control the prices and general market conditions for the products or services they provide.

Finally, and more recently, it obscures the evolution of the shift in economic power from the industrial to the financial sector where 'the financial tail is now wagging the industrial dog', and the subsequent and inevitable extension of the severe economic crisis beyond the financial sector into a worldwide depression at least as great as that of the 1930s. There are many other examples of anachronisms in economic theory, as it struggles with the 'strait-jackets' of 19th century thought, without even mentioning the whole range of non-material human needs that do not appear anywhere in the economic and technocratic approach to the socioeconomic system.

11. Conclusion

Thus, to begin to change the system, humanism and philosophy would have to be rein-

roduced into society and science, that is into the educational system and the ‘theater’ of the media, where adult education takes place. With art, especially dramatic art, playing an important role, we can begin to envision a different reality where human beings and their emotional and moral needs would be given precedence, rather than our current preoccupation with profit making, consumerism, greed, jealousy, and fear. Not that we should ignore the positive values of science and economics, values such as logic, efficiency, rationality, etc. Simply, *these values should serve human needs rather than define them.*

Furthermore, we must seek to remove all the labels that we use, without thinking, to describe people and situations, labels that separate ‘us’ from ‘them’, even in the same society, the same city and the same neighborhood, cultivating hostility and intolerance, and creating a serious obstacle to a more humane society. This is likely a phenomenon that has derived, as Maslow might say, from the insecurity that ironically appears to have characterized the history of all the world since the acquisition of property accompanying the creation of surpluses provided by the domestication of plants and animals over the past 10,000 years, an insecurity that appears to have led to a craze for power and control that has characterized so many people (especially males) since that time.⁶³

Indeed, as humankind seeks to attain the next level of spontaneous evolution to manage its global complexity, it should be inspired by better knowledge of the stages that have come before. Unlike the social Darwinist inspired belief that random mutation, competition, and adaptation create survivors, it is now seen to be a more “intentional” process that is inherent in quantum nature itself. This process leads to the *increased cooperation* that has allowed adaptation and survival, which in turn explains the evolution from prokaryotic uni-cellular organisms to multi-cellular organisms to proto-hominids and then to our own self-conscious organisms.⁶⁴ The increased control fostered by increased complexity is not accomplished by dominance but by increased communication among specialized components of the system. The current urge for control, which characterizes the early Newtonian conception of the universe and which has been carried over into society, is not what has allowed us to evolve into the self-conscious organisms that we are today. If we are to survive as such, and given that we have increasing knowledge about how the quantum universe is organized, we should like all the other elements of that universe to use that knowledge to find new cooperative means of surviving at the global level.

Maslow describes the process whereby children can become integrated, self-actualized adults. We now need to participate in creating a society that would allow the satisfaction of *emotional* needs, as they appear at each stage in human life. Epicurus, at the same time, has described a more modest material environment in which this process could evolve in a natural way, where humans could find the biological and psychological security and respect that would allow them to form a non-hostile identity, an identity that would not be threatened when confronted with other people and other identities in the same or other geographic and social space. Such an identity would not be restricted to ‘us and them’, so that the inevitable conflicts that occur in human society could be solved without resorting to violence.

Unlike the Pythagorean communities, as well as most subsequent utopian religious communities, where obligations are institutionalized, all facets of membership in the 'garden' of Epicurus were voluntary, such that the bonds were based on emotion, not law. The contributions and sharing to create a more egalitarian and just community were done in a spirit of friendship and not obligation. This process was facilitated by the principles of frugality and lack of vanity, which allowed social status and respect to be achieved without resorting to material wealth and fortune. It is this combination of the maximization of pleasure in the context of austerity that would allow the need for self-awareness and self-actualization to be satisfied without undue reference to material goods, wealth and money. Such a philosophy is particularly necessary today, because it would not only facilitate true psychological development, but would do so at a much lower environmental cost.

The philosophy of personal greed, which inspired the rise of capitalism, has brought us to an impasse with nature and with ourselves. Thus, we return to Epicurus not only to see how he sought to satisfy human needs, but also especially how he sought to create a community (society) that resembled the more democratic societies of 'hunters and gatherers'. There is no need to over-romanticize them, but at the same time these people had, for the most part, found ways to live modestly by sharing their limited wealth, without the need to create an identity so closely attached to property.⁶⁵ A 'possessive' identity arose with the domestication of plants and animals and with the idea of 'private property' (land and livestock), as mentioned above. Over time this definition of identity extended to larger geopolitical entities and led it towards a hostile dynamic with an extension from simple jealousy all the way to civil strife and eventually to international wars of conquest, thus turning it into a force for division rather than inclusion: 'You're either for us or against us', where there is no 'third way' and no space for compromise.⁶⁶

Today, the courageous effort to create a common identity among all mankind is forced to struggle with the residue of human evolution over the past 10,000 years, to say nothing of the effects of a social Darwinist inspired predatory capitalist system and its economic theory institutionalized over the past several hundred years. This is a system where every thing and every person is an exploitable resource, and cooperative relations, even with nature, are very difficult, if not impossible to realize. It was precisely this hostility that Epicurus sought to combat with his emphasis on simplicity, equality and friendship in the garden, where property is something that we share as an outgrowth of people learning to develop faith in their fellow human beings.

Instead of helping us to use and develop our emotional and moral selves, mechanistic (social) science has tried to convince us that they are not necessary, that scientific logic would make them redundant, and that shrewdness would suffice. Instead of confronting the maxim of Plato, this science has sought to establish cunning as the highest human value. Can social scientists, especially economists, who have so much influence in today's world, produce a theory for a system that would maximize *security, friendship, and love*? If they can, perhaps the effort to satisfy needs for esteem and self-realization could evolve naturally within the same framework.

So, let us try to look more closely at the meaning of happiness, something that the welfare states have tried to do, although, as seen above, the effort has been blunted by an economistic view of the human being, even in the socialist countries.⁶⁷ But we must measure true need satisfaction, not some fabricated indices developed from existing data. We must ask the people, themselves, remembering that individual perspectives are always social in origin. Social scientists, psychologists and philosophers must all work together to create questionnaires and interview methods that can uncover true human feelings, and then develop indices that would measure such feelings. A significant change in scientific thought, and ultimately in society, would be required, if we were to succeed in such an effort. We need a new vision that would subordinate conventional economic signals to new human concepts. The beliefs of economists about efficiency would have to change to ‘improving not only the material, but also the *emotional and moral circumstances of one person without worsening the emotional and moral circumstances of anyone else*’. All this must refer to new and more humane societies, simply because existing thoughts and behaviors are leading us to a dead end. Indeed, mainstream economic theory is not able to guarantee any of the above-mentioned needs; it appears at this time, at least, to guarantee that all the wealth, property and power will float to the top 1% of the population!

“Individual perspectives are always social in origin.”

Often it is the more adventurous, the ‘marginal’, often younger scientists, who dare to risk their ‘reputation’ with such unorthodox thoughts and deeds. This, at least, is what the analysis by Thomas Kuhn⁶⁸ would predict when he speaks of ‘scientific revolutions’. It is the young scientists who can experience the quantum or Gestalt shift from an old paradigm to a new one without the excessive emotional cost that older scientists are likely to experience. And it characterizes the adventurous people who are leaving the modernist rat race for life in more cooperative settings, whether in large cities or small towns, as they seek to rediscover the emotional and social skills necessary for harmonious living in a return to the ‘Garden of Epicurus’. There they are seeking to find new ways of coexistence among themselves and with nature, ways necessary to found a new post-individualist society, where humans will be the measure, and money, science, mathematics, religion, etc., will be the lesser, though not unimportant means.

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Steve Jobs: Nobel Laureate*

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Abstract

The remarkable achievements of one of the world's greatest entrepreneurs offer profound insights into the fundamental nature of economy and essential missing links in prevailing economic theory. The career of Steve Jobs dramatically illustrates the central importance of human capital in modern economy and the almost incalculable contribution that a single individual can make to technological advancement, social innovation and wealth creation, while enhancing the lifestyle of hundreds of millions of people. Jobs demonstrated that the real basis of economic value is providing valuable products and services that fulfill human needs and aspirations, not unregulated markets and financial speculation. His apparent failures point to the dual nature of uncertainty that presides over all human activity – both the ever present threat of error and the untold opportunities hidden behind the veil. Widely regarded as a genius for inventing better products, his greatest commercial achievement has been in recognizing the central importance of services in modern society and fashioning integrated social service systems within which products act as an enabling technology.

Eager to recognize Winston Churchill's outstanding service to humanity, the Nobel Committee could not bring itself to award the Peace Prize to a leader whose greatest achievement had been fighting and winning the Second World War. Instead they decided to award him the Nobel Prize in Literature for his "mastery of historical and biographical description as well as for brilliant oratory in defending exalted human values". A similar difficulty arises in conferring recognition on Steve Jobs for his remarkable contribution to our knowledge of Economics. Having dropped out of a liberal arts college six months into his freshman year and audited a course on calligraphy before setting off on a six-month trek to India in search of spiritual enlightenment, the idea of conferring on him the Nobel Prize in Economics sounds outlandish.

Indeed, it is very unlikely that Jobs ever read a textbook on economics, let alone intentionally contributed to the formulation of economic theory. Yet we can learn more from this barefoot entrepreneur – he literally went barefoot and bathed infrequently for years until his status as a corporate leader compelled him to don a more respectable garb – about the fundamentals of wealth creation, economic development, technological innovation, employment generation, entrepreneurship, creativity, management and accomplishment than from

* Based on a presentation at the World Academy's session on 'Individuality and Human Capital' at the 14th International Conference on Sustainable Development & Eco-innovation, Krakow, Poland on Sept. 6, 2012.

a whole pile of social science textbooks. A review of earlier economic prize awards, including many for work on minor esoteric issues and two for contributions to the development of computer algorithms responsible for financial speculation, should be sufficient evidence of the need to refocus economics on issues directly related to wealth creation and human welfare.

Steve Jobs' contributions to economy are unquestionable and unprecedented. Starting out in his garage with his partner Steve Wozniak and an initial investment of \$5000 in 1976, within a decade Jobs grew Apple Computers into a \$2 billion company with 4000 employees. Relieved of all management authority by a board of experienced corporate leaders after the launch of the Macintosh computer in 1984, Jobs left Apple. When he returned to Apple 12 years later, the company's market share had fallen from a high of 16% to just 4% and was still declining. Apple's prospects were so precarious that billionaire entrepreneur Michael Dell publically advised Jobs to close the company. Over the next fifteen years, Jobs transformed Apple into the fastest growing, most profitable consumer electronics company in history. By the time of his death in 2011, Apple was a \$156 billion corporation with 72,000 employees and ranked as the most valuable company in the world with market capitalization in excess of \$500 billion – 100 million times greater than his initial startup capital – an unparalleled example of economic growth and wealth creation.

"Jobs understood that economics is not a natural science of scarcity founded on unconscious mechanisms but rather a conscious human science of unlimited creative potential based on human choice."

"Unlike great financial capitalists of the early 20th century such as J.P. Morgan and Rockefeller, Jobs was pre-eminently a human capitalist. Although he accumulated more than \$10 billion in personal wealth during his lifetime, he never valued or sought money for its own sake or based his decisions on profit-maximization."

His astonishing accomplishments defy explanation by traditional economic theory. Had he been a theorist, he most certainly would have rejected the Newtonian concept of the economy as a machine tending always toward equilibrium between supply and demand. Jobs did not strive to discover or conform to universal laws of economics. He understood that economics is not a natural science of scarcity founded on unconscious mechanisms but rather a conscious human science of unlimited creative potential based on human choice. He did not commodify products to meet available demand or attempt to set prices at the equilibrium point. He invented new products to create new types of demand that never existed before and frequently sold them for prices far higher than experts predicted the market would bear. First to market a keyboard, microprocessor, display and operating system as an integrated personal computer ready to use out of the box, Apple's early models became the best-selling compu-

ters in America until behemoth IBM entered the fray with their MS-Dos based PC. Refusing to be brushed aside by his giant nemesis, Jobs then launched the user-friendly Macintosh as the first commercially successful PC with a graphic user interface, mouse, scalable fonts and networking – which became and continues to be the global industry standard.

1. Human Capitalist

The sheer magnitude of these achievements is sufficient to earn Jobs a place among the great entrepreneurs of the modern era, but hardly enough to substantiate his qualifications as a noteworthy economic theorist. It is rather the foundations of these accomplishments that reveal his profound contribution to our understanding of economy. His achievements contradict conventional wisdom in countless ways. His actions belied the traditional view that productivity is a function of natural resources, human labor, technology and capital. Unlike great financial capitalists of the early 20th century such as J.P. Morgan and Rockefeller, Jobs was pre-eminently a human capitalist. Although he accumulated more than \$10 billion in

“Jobs recognized the importance of a product’s physical and technical specifications, but gave equal or greater value to its social and psychological attributes.”

personal wealth during his lifetime, he never valued or sought money for its own sake or based his decisions on profit-maximization. He understood that human resourcefulness is the source of all innovation and discovery. It is the human mind alone that converts ordinary materials into productive resources. Technology itself is simply and solely a product of human invention. The resources he valued most and relied on throughout his life were creativity, intuition, adherence to high values and great personal dynamism.

Jobs’ single most striking personal endowment was intense, focused, overflowing human energy. Like other great entrepreneurs and high achievers in other fields, he exuded intense energy. He recruited bright, talented high energy people. He built a high energy company where people were motivated by a missionary zeal. Creative human energy rather than money or technology was the real fuel for his accomplishments. In whatever Jobs did, he focused and directed that energy with laser-like precision into a force to reckon with. Organization is the means for channeling human energy into productive work. But too often, the corporations of his time had become top heavy, bureaucratic and unresponsive to opportunity. Jobs helped fashion the prototype of a new kind of organization which gave unprecedented freedom for individual initiative and creativity. Apple was among the first to institute informal dress codes, flexible working hours and a flat organization where the best and brightest could rise quickly. The intensity of Apple and its young leader attracted top talent. It also attracted a younger generation of customers inspired by the individualistic values of the 1960s. To own an Apple product became a symbol of human supremacy over the machine.

Jobs’ view of the marketplace was as unconventional as his view of capital. As he believed in the unlimited capacity for enhancing the productivity of resources, he also believed in the unlimited capacity for market expansion. He perceived the market as an ascending hierarchy of human aspirations and expectations which are perpetually rising. He understood that

basic material needs may be limited, but human needs also encompass social and psychological dimensions which are inherently unlimited. He recognized the importance of a product's physical and technical specifications, but gave equal or greater value to its social and psychological attributes. He was a visionary and revolutionary at heart inspired to change the world for the better rather than merely satisfy its minimum needs. His mission was to convert impersonal machines that threatened to subordinate or replace human labor and dehumanize people into user friendly personal tools to empower the individual and liberate people from the specter of mechanization. His strategy was not to fill market needs but energize markets so that they continuously expand. He emphasized the subtle aura surrounding his products and took great efforts to "impute" value by the way products were packaged, presented and marketed. Apple's Superbowl ad of 1984 announcing the launch of the Macintosh was heralded as the greatest commercial of all time.

2. The Notion of Value and Values

Jobs rejected the traditional view that economic value is measured by efficiency and cost of production. For him, real economic value was a function of the perceived value of the product to customers, most especially its use value and utilization value over time. Throughout his career he defined value strictly in human terms as value to the user. He made ease of use a differentiating characteristic of every product, from the desktop metaphor that first appeared on the Mac to the elegant interface of touch screen iPods, iPhones and iPads. He learned the value of simplicity from a study of Zen Buddhism and constantly strove to reduce the complexity of Apple products. He stripped away 90% of the features on the prototype iTunes music software and eliminated even the on-off switch on the iPod. More of an artist than a technologist, he gave equal importance to form and function and was never satisfied with a new product until its physical elegance was as striking as its technical capabilities.

Returning to Apple in the late 1990s, he introduced a PC with an entirely new look called the iMac, which became the fastest selling model ever launched by Apple. He deferred the launch of the first iPhone because he realized he did not love the product, then altered the design to eliminate all corners so the phone would rest softly in the palm of his hand. Indeed, 'love' was the ultimate goal of every product he designed, knowing full well that where love was born, profits would follow. He combined all these values together in an endless quest for perfection that transcended and sometimes appeared to contradict good business sense. He insisted that even the insides of the computers and the layout of circuit boards which customers never saw should be beautifully designed as a statement of craftsmanship and pride.

3. Evolutionary Theory

Jobs was an evolutionary economist, not a mechanist. He soundly rejected the static conception of business and economy. He understood that society is continuously evolving and that evolution generates an endless fount of new needs and aspirations spurring an endless process of invention and innovation and undergoing a continuous process of development. From the launch of the first Apple computer to the phenomenal success of the iPhone, Jobs demonstrated the ability to intuitively sense successive waves of opportunity before they

became apparent to others and to position his company to ride the rising tide, or to create the new wave of opportunity and then ride it as he did with the Macintosh, iPod and iPad.

At the peak of the company's early success, he realized that Apple could not sustain competitive advantage producing commodity computers, so he shifted all his attention from computing technology to the user experience. Returning to Apple in the late 1990s, he saw that the PC had become a commodity product and even the user friendly interface had become commonplace. So he looked beyond the computer to identify human needs that computers could satisfy. As a lover of music, he realized there was not a single portable music player on the market that delivered the quality of music, storage capacity and ease of use he longed for as a consumer. Soon after the successful launch of the iPod, Apple became the largest online music retailer in the world. Within a few years 45% of Apple's revenues were coming from music sales. In similar fashion, he foresaw that the growth of the smartphone market would eventually undermine sales of the iPod, so he pushed Apple into the cell phone business and within five years, Apple's profits on iPhone sales accounted for nearly three-quarters of the total net earnings by cell phone makers globally. Since its launch in 2007, Apple has sold more than 150 million iPhones.

4. Transition to the Service Economy

The success of the iPod was made possible by a radical shift in the mission of Apple from a computer maker to a service provider. Jobs saw the opportunities generated by the transition that was taking place from the industrial economy of manufactured products to the emergence of the modern service economy. Long overlooked by traditional economists, this transition represented a change in perspective akin to the shift from a geocentric to a heliocentric universe. Apple's entry into the music business marked a more fundamental change in focus. Although it continued to base its operation on the sale of electronic products, the emphasis shifted from selling computers and iPods to providing an integrated delivery system to meet human needs. Apple bridged the gap between products and services. Products became the means to deliver enhanced services. The service economy consists mainly of complex integrated delivery systems such as those providing for education, medical care, communication, transportation, entertainment and financial services. In services the quality, capacity and throughput of the delivery system are more important than the technical specifications and capabilities of the product.

"Apple's success is explained by the fact that unlike its competitors, its strategy reflected a perfect balance between technological sophistication, engineering excellence, ease of use, quality of consumer experience and access to market."

Jobs conceived and developed a seamlessly integrated delivery system for digital music consisting of the iMac computing platform, the iPod portable player and the iTunes online store. In order to make the player as small and simple as possible, he shifted most functions to the computer, which served as the link to the iTunes store. At a time when Apple was an insignificant player in the American computer industry, Jobs succeeded in persuading

major music publishers to allow Apple to sell individual songs for 99 cents each, giving it a virtual monopoly over legal online music sales. Apple literally stole the market from Sony, which had the huge competitive advantage of being both a much larger consumer electronics company and a major music publisher. Bill Gates later expressed his utter astonishment at Jobs' accomplishment, acknowledged Microsoft's error, and was determined to recoup lost ground by launching his own system. Neither Sony nor Microsoft could successfully compete with the simple, elegant Apple interface and finally gave up trying. Their failure appears quite astonishing in view of their much larger technological and financial resources. Apple's success is explained by the fact that unlike its competitors, its strategy reflected a perfect balance between technological sophistication, engineering excellence, ease of use, quality of consumer experience and access to market. In 2012 Apple sold its 25 billionth song.

5. Characteristics of the Entrepreneur

Entrepreneurs are the heroes of contemporary society and as in ages past we tend to deify our heroes, endowing them with rare and superhuman attributes. Apart from his high level of personal motivation and intuitive insight, a careful examination reveals very little that was remarkably rare or unique about the personal capabilities Steve Jobs possessed. There was certainly nothing extraordinary about his birth or early childhood. He was born the illegitimate child of a Lebanese man and an American woman who put their child up for adoption at birth, because their parents would not permit their marriage. Steve grew up in a working class American family. His adopted

"When individual capacity fails to explain extraordinary accomplishment, we frequently resort to luck, as the only other 'logical' explanation."

father was a high school drop-out who developed into a skilled mechanic with a pride in craftsmanship. Steve was denied the benefits of education, money and social connections. Nor was he endowed with any obvious social abilities. The sense of having been rejected by his biological parents may account for Steve's apparent indifference to what others thought of him. He seemed free from the normal social conditioning that inhibits unconventional thought and action. He never hesitated to disagree with his peers, aggressively confront people in positions of authority, or dare to attempt what others thought impossible. As a youth he called up the president of Hewlett Packard to ask for free spare parts for an experimental product. He countermanded the advice of the Apple board and spent his own money funding the original Mac Superbowl ad. He challenged the CEO of Corning Glass to make an unbreakable surface for the first touch screen iPod, after being told that what he asked for was technically impossible, thereby successfully ushering in a whole new generation of touch screen consumer electronic products.

Many who conceded Steve's lack of technical expertise regard him instead as a marketing genius. Steve's flair for dramatic product launches and his success in attracting free media coverage are legendary. But he certainly was not known as a marketer in the traditional sense. He placed no faith in market research or consumer feedback. Of far greater significance was

his ability to perceive opportunity where others saw nothing at all. He had the remarkable capacity to sense what would please consumers.

Nor could Steve be described as a born entrepreneur in any real sense of the word. He lacked the native technical inventiveness of an Edison. He had terrible people skills, frequently humiliating, offending and deceiving employees, co-workers and business partners. At least in the early days, he understood very little about business or organization, apart from a shrewd capacity for negotiating, perhaps a genetic capacity inherited from his biological father. He failed dismally as an operations manager, which led to his dismissal by the Apple Board. He learned the importance of organization the hard way. Returning to Apple a decade later, he systematically applied the lessons of supply chain management so successfully employed by Dell.

When individual capacity fails to explain extraordinary accomplishment, we frequently resort to luck as the only other 'logical' explanation. It is true certainly that Steve had the good luck to be born in the right place at the right time. He grew up in the early 1970s in what later became known as Silicon Valley, at exactly the moment when the microprocessor was born. Raised as a mechanic's son, he was exposed to electronics as a child. As earlier generations of American youth repaired cars as a hobby, Steve was among the first generation who made assembling electronic gadgets a hobby. He and Wozniak were both hobbyists who only later realized their hobby had commercial potential. Granted that Steve was lucky to grow up where and when he did, that does not explain why he was able to exploit that opportunity so much more successfully than hundreds of thousands of other American youth raised under similar circumstances.

6. Signs of Genius

Indeed, Steve's lack of specific expertise may have been his greatest endowment. For what he lacked in specialized knowledge and skill, he compensated for marvelously by a wider perspective that saw the big picture, recognized the importance of many different factors, and combined them all into a comprehensive approach.

Though he may have lacked specialized talent, Jobs did possess notable signs of genius. He said he learned the importance of intuition from wandering in India and learned to trust his sensitivities to lead him in the right direction. He had an intuitive capacity to relate to the whole which is more than the sum of its parts. Unlike most entrepreneur business leaders who tended to give inordinate importance to one or two essential components of business – technology, market, capital, people or organization – at the expense of the others, Steve eventually learned to appreciate the essential role played by all of them and to fashion a business with considerable strength and balance in each of them. Thus, by the end of his career, Apple was not only a leader in technology and marketing, but possessed nearly \$100 billion in accumulated cash reserves.

Jobs also possessed the genius' ability to unify disparate and apparently unconnected things. He ushered in the whole new desktop publishing industry by his insistence on scalable fonts and WYSIWYG (what you see is what you get) on the Macintosh. Like many geniuses,

he had the capacity to see profundity in simplicity. He had an insatiable urge to simplify design and function and to focus business strategy on a very small set of priorities. On his return to Apple, he trimmed the company's product line from a dozen product lines to just four. He also had the capacity to perceive deeper levels of causality which others failed to see. Thus, he recognized that branding Apple as the antithesis of Big Brother IBM would win the enduring loyalty of a younger generation.

Geniuses also have the capacity to perceive universal truths of life and human nature. Jobs realized that widespread anxiety regarding domination by the machine – a recurrent theme of Hollywood movies such as 2001, Terminator and Matrix – could be overcome by making machines as simple and friendly as possible, so what once appeared as a threat could become an indispensable companion.

7. Integration

Society is a complex web of interconnections. The increasing linkage and integration of previously isolated or loosely connected people, activities and functions are the very essence of the process of social development. The enormous power of language, roads, cities, markets, money and the Internet resides in their capacity to foster interconnections and integration. Foremost among Jobs' special endowments was his demonstrated capacity as a great integrator. Throughout his career, he intuitively recognized the value of integration. He began by integrating technical components. The original Apple computer was the first to integrate keyboard, monitor and circuit board into a single product. With the Mac he shifted to marrying technology and design and integrating them with customer perceptions and user experience. Apple's success as a music retailer resulted from the masterful integration of computers, music players, and an online music store integrated with the music publishing industry.

The success of the iPhone illustrates importance of viewing integration in an evolutionary perspective in which yesterday's strength becomes tomorrow's weakness, and yesterday's success, tomorrow's failure. From the launch of the first Apple computer up to the launch of the iPhone, Jobs had maintained a near fanatical faith in value of control. While Wozniak wanted to make their first computer open and accessible for expansion by users, Jobs insisted on a closed system in order to maintain perfect control over the user interface and experience. He applied the same logic by refusing to license the Macintosh operating system to other computer makers and resisted for years the opening of the iTunes platform to Windows computers. Then suddenly with the launch of the App Store he dropped the control strategy and adopted the very opposite principle, enabling any developer to create an app to expand the functioning of the iPhone. The introduction of third party Apps and the App Store transformed the smartphone into a customizable multi-purpose personal device capable of performing thousands of different functions. Currently, more than 800,000 apps are available, many of them available to the public free-of-charge, and more than 40 billion apps have been downloaded by users worldwide.

The iPhone perfected the integration of every conceivable function that could be conveniently performed on a small portable device – phone, email, browser, camera, music and

movie player, e-book, game platform, GPS, maps and personal assistant. The iPad conquered the unoccupied territory between the cell phone and the notebook computer, giving new life to the newspaper and magazine publishing industry and spurring development of electronic textbooks and online education. In spite of predictions the product would bomb, in 2010, the first year of its launch, Apple sold 7.5 million iPads. In 2012 it sold 57 million. In this sense, Apple has successfully integrated its products and delivery systems to meet a wider range of personal needs and preferences of more human beings than any other company in history. The products it has pioneered have become iconic symbols of our age.

8. The Enigma of Uncertainty

Uncertainty is the fundamental condition of existence. No matter how much knowledge and experience we acquire, we lack the vision to infallibly see even the very next moment in life's movement. The entire insurance industry has evolved as a commercial sector designed to offset the impact of uncertainty. The aspiration for certainty is an essential component of humanity's quest for security.

Uncertainty haunts our every step. Even Jobs' famed intuition was not infallible – at least not in the way he expected. After leaving Apple, he failed dismally at NeXT computer. Free from interference by a corporate board, he set out to build from scratch the world's best personal computer. He invested \$7 million of his own money to create a world class engineering design and manufacturing facility capable of producing tens of thousands of the world's most advanced personal computers every month, but he never succeeded in selling more than 400 a month. It was not that market or technology conditions changed suddenly. It was simply that for all his insight into their potential, the advanced computer he brought to market proved too expensive to attract significant customers. The company lost millions and its computers never became a commercial success. But there is a flip side to uncertainty, for it is also the source of unexpected opportunities. In 1998 Apple agreed to purchase NeXT for \$400 million in order to acquire rights to the NeXT operating system. Jobs' foray into advanced computing was fully vindicated and through the acquisition, Jobs returned to the Apple board.

Ironically, the greatest opportunities seem to emerge from ventures into domains which we understand the least. Jobs' next endeavor also appeared destined for failure. He invested about \$50 million in Pixar, which he acquired from movie producer George Lucas. By purchasing Pixar, Jobs hoped to shift his emphasis from computers to the application of computer technology for specific purposes. Pixar made specialized computers and software for animated special effects. He soon realized the high price of the system severely limited its market, so he was forced to drastically cut staff and production. In this case, inconceivable opportunity seems to emerge almost literally out of nothing, like the sudden appearance of energy out of the zero-point energy field, which is fundamentally related to Heisenberg's uncertainty principle. It turned out that Pixar included a tiny animation department making short films intended to demonstrate the power of its animation products. The department was not even considered a profit-center. At a time when he was cutting back on expenses everywhere, Jobs invested \$300,000 of his own money to fund development of a short animated

video about talking toys. That video became the first computer generated video to win an Academy Award. As a result Disney contracted with Pixar to produce a full length animated motion picture based on the same theme. Disney was hoping to generate \$50 million in box office revenues. Instead Toy Story brought in \$380 million in box office receipts, the first of 11 straight Hollywood blockbuster films produced by Pixar. Jobs' intuition and willingness to risk converted a failed computer company into the top animation company in the world. Ten years later Disney bought Pixar for \$7.4 billion. Creative uncertainty generated greater commercial opportunity than anything Jobs had known up to that time.

Risk and opportunity are two sides of the same coin known as uncertainty. The greatest business risk Jobs ever took was probably his decision to launch a chain of Apple retail stores in the face of serious opposition from members of the Apple board with extensive experience in retailing who cited the failure of other electronics producers and argued persuasively that the venture was bound to fail. Still, Jobs persisted and worked for months to perfect a new concept in retailing. When the first Apple Store opened in New York in 2001 it attracted record crowds and proved an instant success. As new stores opened, average foot traffic averaged 20 times higher than industry norms. By 2011 Apple operated 326 stores around the world averaging \$34 million in revenues for a total of \$10 billion.

9. Role of the Individual in the Social Sciences

Of all the insights and principles of economic development that can derive from a study of Jobs' accomplishments, a few stand out as of central importance to the future of social science. The quest of social sciences to replicate the formulation of impersonal universal laws and the mathematical precision of the physical sciences have introduced four fundamental distortions that prevent the emergence of a true science of society. First is the implicit assumption that there are universal and immutable laws applicable to the social sciences akin to the laws of natural science. The theoretical conclusions that can be drawn from Steve Jobs' achievements certainly lack the mathematical elegance and statistical precision which macroeconomics strives for in its effort to emulate physical science as well as the simplicity and symmetry of microeconomic formulations based on assumptions rarely, if ever, found in the real world. Instead, they support the view that the laws governing the society are constantly evolving with the evolution of human consciousness.

"A study of Steve Jobs' accomplishments fully justifies a reorientation of social science to take into account the complex uniqueness and the incalculable power of the individual to change the destiny of the collective."

Second is the postulate that social behavior, like physical phenomenon, can be explained by mechanical principles that ignore the central significance of conscious awareness and human choice. Jobs' work provides incontestable evidence of the central role of human aspirations, perceptions, beliefs, values, attitudes and choice in economic development. The future of Pixar could never have been predicted by examining its financial statements or market research reports in 1988. It resided in the imagination of a Pixar employee named

John Lassiter who conceived of a short film called *Tin Toy* and in the faith of the entrepreneur who risked his money on a long shot because he believed in the value in Lassiter's creative inspiration.

Third is the notion that a science of society, like a science of nature, can be impartial and value free and that the role of scientists is merely detached observation of natural phenomena. Although we may consider Nature as motiveless and value free in its actions, the same can never be said of human social behavior. Human conduct is purposeful and value based and that must apply to the study of society as well. Social science must be value based and carried out with the conscious intention of promoting human welfare, not merely understanding the way society presently works.

Fourth is the premise that individual behavior can be aggregated to draw generally valid conclusions – as physicists aggregate data regarding subatomic particles, molecules, and the movement of galaxies – when in fact statistical aggregation merely conceals but does not obliterate the significance of conscious individual variation. A study of Steve Jobs' accomplishments fully justifies a reorientation of social science to take into account the complex uniqueness and the incalculable power of the individual to change the destiny of the collective. Human history is replete with instances in which the actions of outstanding individuals – explorers, inventors, discoverers, pioneers, social reformers, military and political leaders, original thinkers, creative artists, saints – have literally changed the world. The magnitude of Jobs' achievements are remarkable, but in no sense unique. Edison, Ford, Churchill, Gorbachev, Berners-Lee and countless others have demonstrated the same power of formed individuality. There can be no valid science of economy or society that studies only the action of social organizations and social systems, overlooking the unique contributions of the individual.

“Every significant advance in the development of society, civilization and culture begins with the initiative of an individual to set out on a new course of thought or action, often in the face of intense opposition and even persecution for deviant behavior.”

The single member and the collective, human capital and social capital, constitute the infinitesimal microcosm and the infinitely complex macrocosm of society. Neither exists without the other. Neither is adequate in itself to explain the other. The individual is the link and the bridge between the micro and the macro. By the term ‘individual’, I refer to those members of society who do not merely conform to the prevailing beliefs, attitudes and ways of life propagated or imposed by the collective. An individual is one capable of original thinking that transcends and rejects conventional wisdom, one with the courage to reject conformity to prevailing attitudes and values, one with the fortitude to attempt actions which others fear to initiate or believe are impossible. Every significant advance in the development of society, civilization and culture – from the invention of fire to the development of the

World Wide Web – begins with the initiative of an individual to set out on a new course of thought or action, often in the face of intense opposition and even persecution for deviant behavior. As today we remember Socrates, rather than those who compelled him to take hemlock as the penalty for deviant thought, and as we celebrate the memory of Copernicus for rejecting the geocentric doctrine of the Church, so we must recognize and honor the living truths exemplified by Steve Jobs' accomplishment. The bright future of social science lies in the synthesis, integration and harmonious reconciliation of these two spheres of social existence.

"In the early days of its development, economics was concerned with the problem of scarcity, earning it the title of the dismal science. Today, there is no longer any necessity for scarcity."

10. Conclusions

It is ironic that the principles by which Steve Jobs created so much wealth designing and selling computers should be so resistant to analysis by econometric computer modeling. But this deficiency – if it is a deficiency – is more than compensated by the fact that a study of Jobs' work brings into sharp relief fundamental premises of real world economics that are normally obscured or abolished by abstract theory and mathematical models.

This analysis certainly does not purport to provide a full picture of the science of economy, let alone society, but rather to highlight some of the most blatant deficiencies in current conception. Steve was a pragmatist, not a theorist. His concern was the operation of the private sector economy, not management of the economy as a whole. Study of his actions provides little insight into the catalytic role of money in society, the essential contribution of financial markets to the real economy, the insidious impact of speculation, the necessity of government regulation to maintain open markets, the rightful function of central banks and deficit spending, the responsibility of government for promoting full employment, equitable distribution, the welfare of all citizens and protecting the rights of future generations by a judicious and sustainable use of ecological resources. But it does provide essential insights into the vital core of economic theory.

What then is the essence of Jobs' theory of economy? Economy is a human science concerned with the study of how conscious human beings and social groups apply and direct their energy, knowledge, skills and organizational capabilities to generate wealth, promote human welfare and enhance the well-being of all. In the early days of its development, economics was concerned with the problem of scarcity, earning it the title of the dismal science. Today there is no longer any necessity for scarcity. Society possesses all the necessary knowledge, technology, organizational capabilities and financial resources to eradicate poverty and economic insecurity in a flash. Today there is urgent need for a theoretical formulation that ensures to all economic security, welfare and an equitable share in the earth's and humanity's collective resources. A study of Steve Jobs' contribution to economy confirms our collective capacity to achieve these goals now.

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The Dogma of Democracy Gone Sour

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“The death of democracy is not likely to be an assassination from ambush. It will be a slow extinction from apathy, indifference, and undernourishment.” - Robert Hutchins

Abstract

When it comes to political organisation the western world likes to claim the moral high ground. It touts the benefits of free and fair elections, as if the concept of democracy were a self-evident, eternal truth.

For the US State Department, democracy has taken on near-religious significance. It has become a right, just as much as the right to life, liberty and happiness.

If the US and many other western countries actually practised what they preached, they would at least be giving their sermons from solid turf. But because they continue to undermine the practice of democracy at home, their pulpits are not very high and the ground they stand on is increasingly squishy.

In the nations with the loudest democracy trumpets, big businesses and rich individuals have corrupted the democratic process. They influence elections and laws to their advantage and suppress changes they don't like. At the same time, the poor have become increasingly disenfranchised, either because they are deliberately excluded from the voting process or because they no longer believe it has any value.

This is not just a failure of democracy. It is also a failure of communication. Rather than achieving its goals, and promoting an idea with considerable merit, the West is undermining the cause. Democracy has become little more than an ideological weapon, and it is driving the doubters away.

1. Its Death is not Exaggerated

Democracy is not difficult to understand. It means “rule by the people”. It is difficult to achieve, however. And even when it has been achieved, when there is a fair electoral system and a government that represents the views of the people, it is easy to see the system's flaws. To paraphrase Thomas Jefferson,* democracy can still end up being “mob rule” with 51% of the voters imposing their ideas on everyone else.

When we talk about democracy we usually mean one particular form of representative democracy, called liberal or constitutional democracy. Under this system, most western

* Jefferson actually said: democracy is nothing more than mob rule, where 51 percent of the people may take away the rights of the other 49.

countries hold regular elections to vote for representatives who make decisions on behalf of the electorate. To prevent these representatives from assuming too much power, there is usually a constitution, a legal framework that establishes the principles that the government must follow.

As well as a constitution, a democracy needs an independent judiciary and a fairly elected government. It needs equality of opportunity to stand for election. Anyone should be able to put themselves up as a candidate. Exceptions can exist, for those who might be criminally insane for example, but these should be rare. Being elected should certainly not depend on how rich you are.

A good system also needs universal suffrage. Voting should be open to all adults, without discrimination on the grounds of race, sex, beliefs or social status. This means that even those in prison should have a vote. If not, then those who are wrongful victims of political persecution or of bad laws are denied a voice.

There also needs to be an independent media — a free press — or at least mostly free. Voters should have access to opinions but, more importantly, to facts. It is vital that citizens' views are not influenced by biased reporting, or by media moguls with their own agendas who are able to twist their audience's opinions to suit their own ends.

Democracy also requires freedom of association. Citizens should have the right to form political groups and to have their views heard, even when these views are odious to the majority. Because of the increase in anti-terrorism legislation since 9/11, this requirement has been weakened in many western countries.

Finally, to have a high level of democracy, societies need to have citizens who are educated and informed about their rights and civic responsibilities. There needs to be a working relationship between those in power and those who vote.

It is easy to forget that an electorate has responsibilities too, that the process is two-way. It is not just up to those in power to make sure the system functions, it is also up to every citizen. Citizens, if they care about where their societies are heading, need to take responsibility for being properly informed; they need to speak out when the system does not work; and they need to take part in the political process, even if just through the act of voting.

In many western countries, however, the relationship that exists between the ruled and the rulers has become fraught. Those who have been elected often pursue their own agendas, or look after the interests of lobby groups, before they think of those who elected them into power. Lobbyists, especially those representing big businesses, have become extremely powerful in Europe, including in the UK, Canada, Australia and, especially, in America. They have distorted the political process by influencing elections and laws in ways that the electorate cannot.

At the same time, many western citizens have less direct contact with their political representatives than they once did. Politicians focus instead on a handful of swing voters, meaning that the voice of the majority is frequently ignored. As a consequence, many western citizens

are choosing to vote less than before, and take less interest in politics.

Democracy has always had its problems, of course. Ancient Greece's Aristotle called it one of the three "evil" forms of government. It was not even favoured by America's Founding Fathers who feared democracy as much as they feared monarchy. They worried that a democratically elected government would take away the people's freedom, either by being too weak to protect them from external threats, or by becoming too powerful and taking over every aspect of their lives.

"America's democratic system, the one the world is supposed to look up to as a model, is suffering from exactly the problems the Founding Fathers were trying to avoid."

To try and get around these problems, America chose a constitutional republic as its model of governance where executive, legislative and judicial powers are separated. The constitution and the judiciary are meant to stop any abuses by those in power. The intention was to make "a government of laws, not men".

Despite these efforts, America's democratic system, the one the world is supposed to look up to as a model, is suffering from exactly the problems the Founding Fathers were trying to avoid. Five stand out in particular:

- The constitution is being undermined.
- Millions have become disenfranchised.
- A tiny number of people determine the outcome.
- Big businesses and lobbyists have corrupted the process.
- There is too little choice.

First, the constitution: thanks mainly to a series of badly thought out laws put in place since 9/11, America's constitution is no longer providing the protection for citizens that it should.

Those wanting to oppose the government, members of the Occupy Movement for example, have been denied the right to assemble and speak out, which is a violation of the 1st Amendment. Muslim groups have also been singled out for surveillance¹ while journalists² have been detained to stop them reporting stories the government does not like. These are also violations of the 1st. Just as bad, the PATRIOT Act allows the government to monitor citizens without recourse to law, which violates the 4th. The state can now legally obtain the source and addressee information of all telephone and online communications and gain access to unopened electronic mail. It can also collect DNA samples, even from those not convicted of any crime.

Even 30 years ago such activities would have been unthinkable. It would have been unimaginable that private letters between individuals could be opened and read by the State or that a democratic western government could demand unrestricted access to medical, finan-

cial, business and educational records or authorise secret searches of homes and offices, without extensive legal process. Yet these are all permitted in America today.³

The second problem is with the democratic process itself. In recent years, many more people have been excluded from voting in America. According to a report published in 2012 by the Pew Center,⁴ as many as 24% of those eligible to vote have not registered to do so because the process has been made too complex. That is at least 51 million people.

In many states, people wanting to vote must now have a government-issued photo ID card or passport. Because few Americans travel abroad and many others are wary of authority, this new rule alone has effectively disenfranchised 12% of the population. A disproportionate number of these people are poor and black.

Convicted criminals are also denied the right to vote in many US states, even after they have served their sentence and are free, in gainful employment, and paying their taxes. In those states where they can re-register, the process is often so difficult that few go through with it. Those in prison are also unable to vote, unlike in many other western countries, including neighbouring Canada. As the prison population of the US is so large compared to other developed nations, this adds up to a great many people. In total, more than 2% of the electorate is excluded because they are, or were, felons. Again, a disproportionate number are poor and black.

2. Good for Swingers, but not for Everyone Else

Even for citizens able to vote, there is a third problem. In most American states, the voice of the average voter is practically worthless.

In presidential elections, as well as in many others, the results in 38 of America's 50 states are entirely predictable. That leaves just 12* that matter, that decide the outcome. The population of these states in 2012 was 86 million people, 28% of the US population. This means that the American President, the holder of what is arguably the biggest job in the world, is actually chosen by little more than one-quarter of the US population (half of whom do not bother to vote).

This also means that presidential hopefuls spend huge amounts of time, money and effort on a small number of voters, in some of the smallest states in the country, largely ignoring the wishes and interests of the majority.

The result is national apathy, with average voter turnout in recent federal elections falling below 40%⁵ in many states, reflecting a lack of interest or faith in the process.

3. The Voters' Power Diminished

The fourth major reason why the US and many other western democratic systems are failing has been the rising influence of businesses and lobby groups. Of greatest concern are

* Nevada, Colorado, New Mexico, Iowa, Wisconsin, Michigan, Ohio, Pennsylvania, Virginia, New Hampshire, North Carolina and Florida

so-called super PACS — which are like traditional Political Action Committees (PACs) on steroids.

Super PACS are pressure groups that are largely free of any restrictions on their political activities. They can raise unlimited cash from anonymous donors and spend it praising or disparaging particular candidates without declaring their interests or explaining who is supporting them.

As most big businesses support the right-leaning Republican Party in America, many voters are being deceived; they are unaware that the opinions they see expressed on television are often from biased sources. The rich and anonymous are able to manipulate the electoral process for their own ends, without the electorate understanding that the information presented to them is being funded by someone with a specific, but usually undeclared, agenda.

A further concern is the growing influence of America's richest individuals. Campaign contributions of wealthy people have long been vital to running US elections, especially at the federal level. But for many years they have also been a source of worry. The concern is that these donations allow rich people to buy influence and gain some advantage, often for their businesses or investments, or because they have a private political objective.

A 2012 survey by The Brennan Center⁶ showed that most Americans believed that as well as leading to greater corruption, the current electoral financing system made it less likely that poorer people would vote at all. "One in four respondents — and even larger numbers of low-income people reported that they are less likely to vote because big donors have so much more sway than average Americans", the report said.

Part of the problem, of course, is that America's politicians have been forced to sell their souls, because the cost of running campaigns is so high. Without such huge payments, or a different model, most candidates cannot hope to stand for office. While anyone can theoretically put themselves forward for election, in practice the race is now only open to those who can raise the funds through these corrupting channels, or to the super-rich.

4. Is a Two-party State Twice as Good as a One-party State?

The fifth reason America's political system is so undemocratic (this also applies in the UK, Ireland, Australia and many other countries) is the astonishing lack of choice offered to voters at the polls.

To outsiders, it sometimes appears as if America only has two political parties, the Democrats and the Republicans. In fact, there are at least 40 parties to choose from. Among the next largest are the Constitution Party, The Green Party and the Libertarian Party. But there are many more. Most are small and fragmented, some of them having split from the main parties. A large number have extreme views. But some also reflect the views of millions of people, such as the Green Party.

What most of these parties lack is the funding needed to run an enduring campaign at a national or even at a local level. Although more than ten other parties endorsed candidates for

the 2012 presidential election, few polled even a fraction of 1% of the vote, partly because they found it almost impossible to be heard.

The fact that these parties exist allows politicians from the two dominant parties to claim that their system is democratic, because anyone can stand for office and because the views of all strands of the political spectrum are represented. But the practical barriers that prevent these other parties from holding office make such statements meaningless.

5. The Dogma of Democracy

A wider issue, mostly for those living in less democratic countries, is that the western concept of democracy has become an ideology, a weapon used to bash them. For several decades, the western world has exported an idea, trying to impose it on everyone else. Cosily wrapped in the principles of freedom, equality and justice, “democracy” has become dogma, a doctrine that is proclaimed as true without those who are imposing it needing to provide any proof — because the proof is no longer available. Coupled with the dogma of “the market”, it has encouraged the citizens of other nations to turn their countries into debt-driven consumerist societies, no longer fuelled by a desire for genuine progress but by a heady hunger to go shopping.

As Francis Fukuyama argued in *The End of History and The Last Man*, the great passions that prompted armed struggles and tremendous acts of heroism in the 20th century and before, have been gradually superseded by the call of the market. Material improvement has given way to material gain. The push for democracy and the free market has made nations trade their principles for Pringles.

Western⁷ interference, in the name of democracy, played a large part in the “Arab Spring” of 2011, especially in Egypt, where western NGOs spent millions of dollars trying to direct the revolution and manipulate the political process.⁸ Many of those working for these NGOs were eventually expelled by the Egyptian government. Despite this, western meddling in the country’s political processes remains rife.

The United Arab Emirates has also expelled⁹ “pro-democracy” NGOs from Europe and the US, which the government found to be tinkering with the country’s internal affairs. After the revolution in Libya,¹⁰ the government there attempted to stop US and European groups funding local NGOs as well, fearing that they would manipulate the local democratic processes.

Other countries known to have expelled westerners who were interfering in the democratic process include Russia, Pakistan, North Korea, Syria, Sudan and Bolivia. Many of the same NGOs that were in North Africa in 2011 also played a part in the changes that took place in Myanmar¹¹ in 2012, when the country began to open up to western influence. There are also reports that western-backed groups have intervened in the political freedoms of both Thailand¹² and Malaysia.¹³

Rather than achieving worthy goals, the West’s export of a warped dogma has been undermining its place in the world. Under the name of democracy, the West has tried to

incite resistance to the lawful authority of many governments, to overthrow regimes. It has done this to widen western influence, to gain access to raw materials, and to provide business opportunities for western firms, which then strengthen these objectives by attempting to convert them to the free market.

Democracy has lost touch with its meaning and purpose. It is failing to do what it is meant to, in America, Britain and many other places. It has become a tool for western nations to force their ideas onto others. Tied to the religion of economic growth, carried on the wings of the free market, it is being sold as the answer to everyone's problems, when it is not.

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Malthus

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Abstract

T.R. Malthus' "An Essay on the Principle of Population" (1798) was one of the first systematic studies of the problem of population in relation to resources. It was the first such study to stress the fact that, in general, powerful checks operate at all times to keep human populations from increasing beyond the available food supply. In a later edition, published in 1803, he buttressed this assertion with carefully collected demographic and sociological data from many societies at various periods of their histories. The debate between Malthus and his contemporaries closely parallels current discussions of optimal global population in relation to the carrying capacity of the earth's environment. This essay will discuss not only the historical debate on the ideas of Malthus, but also its relevance to the 21st century. In particular, the essay will discuss the danger that a famine of unprecedented scale may occur during the present century, caused by prohibitively high prices of fossil fuels (on which modern agriculture depends) compounded by the effects of climate change.

1. Introduction

Because of the close parallel between the optimism and disappointments of Malthus' time and those of our own, much light can be thrown on our present situation by rereading the debate between Malthus and his contemporaries. Malthus classified the checks on population growth into two categories: "preventive checks" such as late marriage and contraception, which lower birth rates; and "positive checks", such as famine, disease and war, which raise death rates.

Looking at today's world, we can see that in some regions, the preventive checks, which lower the birth rate, seem to be dominant, while in other regions, the grim Malthusian forces of famine, disease and war hold sway, raising the death rate. The contrast makes the work of Malthus relevant to the 21st century, as we strive to achieve global peace and to eliminate the suffering caused by poverty and preventable disease.

2. A Debate between Father and Son

Thomas Robert Malthus (1766-1834) came from an intellectual family: His father, Daniel Malthus, was a moderately well-to-do English country gentleman, an enthusiastic believer in the optimistic ideas of the Enlightenment, and a friend of the philosophers Henry Rousseau,

David Hume and William Godwin. The famous book on population by the younger Malthus grew out of conversations with his father.

Robert Malthus was at first tutored at home; but in 1782, when he was 16 years old, he was sent to study at the famous Dissenting Academy at Warrington in Lancashire. Joseph Priestley had taught at Warrington, and he had completed his "History of Electricity" there, as well as his "Essay on Government", which contains the phrase "the greatest good for the greatest number".

Robert's tutor at Warrington Academy was Gilbert Wakefield (who was later imprisoned for his radical ideas). When Robert was 18, Wakefield arranged for him to be admitted to Jesus College, Cambridge University, as a student of mathematics. Robert Malthus graduated from Cambridge in 1788 with a first-class degree in mathematics. He was Ninth Wrangler, which meant that he was the ninth-best mathematician in his graduating class. He also won prizes in declamation, both in English and in Latin, which is surprising in view of the speech defect from which he suffered all his life.

In 1793, Robert Malthus was elected a Fellow of Jesus College, and he also took orders in the Anglican Church. He was assigned as Curate to Okewood Chapel in Surrey. This small chapel stood in a woodland region, and Malthus' illiterate parishioners were so poor that the women and children went without shoes. They lived in low thatched huts made of woven branches plastered with mud. The floors of these huts were of dirt, and the only light came from tiny window openings. Malthus' parishioners' diet consisted almost entirely of bread. The children of these cottagers developed late, and were stunted in growth. Nevertheless, in spite of the harsh conditions of his parishioners' lives, Malthus noticed that the number of births which he recorded in the parish register greatly exceeded the number of deaths. It was probably this fact which first turned his attention to the problem of population.

1793, the year when Robert Malthus took up his position at Okewood, was also the year in which Daniel Malthus' friend, William Godwin, published his enormously optimistic book, *Political Justice*. In this book, Godwin predicted a future society where scientific progress would liberate humans from material want. Godwin predicted that in the future, with the institution of war abolished, with a more equal distribution of property, and with the help of scientific improvements in agriculture and industry, much less labour would be needed to support life. Luxuries are at present used to maintain artificial distinctions between the classes of society, Godwin wrote, but in the future values will change; humans will live more simply, and their efforts will be devoted to self-fulfillment and to intellectual and moral improvement, rather than to material possessions. With the help of automated agriculture, the citizens of a future society will need only a few hours a day to earn their bread.

Godwin went on to say, "The spirit of oppression, the spirit of servility and the spirit of fraud: these are the immediate growth of the established administration of property. They are alike hostile to intellectual improvement. The other vices of envy, malice, and revenge are their inseparable companions. In a state of society where men lived in the midst of plenty, and where all shared alike the bounties of nature, these sentiments would inevitably expire. The

narrow principle of selfishness would vanish. No man being obliged to guard his little store, or provide with anxiety and pain for his restless wants, each would lose his own individual existence in the thought of the general good. No man would be the enemy of his neighbor, for they would have nothing to contend; and of consequence philanthropy would resume the empire which reason assigns her. Mind would be delivered from her perpetual anxiety about corporal support, and free to expatiate in the field of thought which is congenial to her. Each man would assist the inquiries of all."

Godwin insisted that there is an indissoluble link between politics, ethics and knowledge. Political Justice is an enthusiastic vision of what humans could be like at some future period when the trend towards moral and intellectual improvement has lifted men and women above their present state of ignorance and vice. Much of the savage structure of the penal system would then be unnecessary, Godwin believed. (At the time when he was writing, there were more than a hundred capital offenses in England, and this number had soon increased to almost two hundred. The theft of any object of greater value than ten shillings was punishable by hanging.)

In its present state, Godwin wrote, society decrees that the majority of its citizens "should be kept in abject penury, rendered stupid with ignorance and disgusted with vice, perpetuated in nakedness and hunger, goaded to the commission of crimes, and made victims to the merciless laws which the rich have instituted to oppress them". But human behavior is produced by environment and education, Godwin pointed out. If the conditions of upbringing were improved, behavior would also improve. In fact, Godwin believed that men and women are subject to natural laws no less than the planets of Newton's solar system. "In the life of every human", Godwin wrote, "there is a chain of causes, generated in that eternity which preceded his birth, and going on in regular procession through the whole period of his existence, in consequence of which it was impossible for him to act in any instance otherwise than he has acted."

The chain of causality in human affairs implies that vice and crime should be regarded with the same attitude with which we regard disease. The causes of poverty, ignorance, vice and crime should be removed. Human failings should be cured rather than punished. With this in mind, Godwin wrote, "our disapprobation of vice will be of the same nature as our disapprobation of an infectious distemper."

In France the Marquis de Condorcet had written an equally optimistic book, *Esquisse d'un Tableau Historique des Progrès de l'Esprit Humain*. Condorcet's optimism was unaffected even by the fact that at the time when he was writing he was in hiding, under sentence of death by Robespierre's government. Besides enthusiastically extolling Godwin's ideas to his son, Daniel Malthus also told him of the views of Condorcet.

Condorcet's *Esquisse* is an enthusiastic endorsement of the idea of infinite human perfectibility which was current among the philosophers of the 18th century, and in this book, Condorcet anticipated many of the evolutionary ideas of Charles Darwin. He compared humans with animals, and found many common traits. Condorcet believed that animals are able to think, and even to think rationally, although their thoughts are extremely simple

compared with those of humans. He also asserted that humans historically began their existence on the same level as animals and gradually developed to their present state. Since this evolution took place historically, he reasoned, it is probable, or even inevitable, that a similar evolution in the future will bring mankind to a level of physical, mental and moral development which will be as superior to our own present state as we are now superior to animals.

As Daniel Malthus talked warmly about Godwin, Condorcet, and the idea of human progress, the mind of his son, Robert, turned to the imbalance between births and deaths which he had noticed among his parishioners at Okewood Chapel. He pointed out to his father that no matter what benefits science might be able to confer, they would soon be eaten up by population growth. Regardless of technical progress, the condition of the lowest social class would remain exactly the same: The poor would continue to live, as they always had, on the exact borderline between survival and famine, clinging desperately to the lower edge of existence. For them, change for the worse was impossible since it would loosen their precarious hold on life; their children would die and their numbers would diminish until they balanced the supply of food. But any change for the better was equally impossible, because if more nourishment should become available, more of the children of the poor would survive, and the share of food for each of them would again be reduced to the precise minimum required for life.

Observation of his parishioners at Okewood had convinced Robert Malthus that this sombre picture was a realistic description of the condition of the poor in England at the end of the 18th century. Techniques of agriculture and industry were indeed improving rapidly; but among the very poor, population was increasing equally fast, and the misery of society's lowest class remained unaltered.

3. Publication of the First Essay in 1798

Daniel Malthus was so impressed with his son's arguments that he urged him to develop them into a small book. Robert Malthus' first essay on population, written in response to his father's urging, was only 50,000 words in length. It was published anonymously in 1798, and its full title was *An Essay on the Principle of Population, as it Affects the Future Improvement of Society, with Remarks on the Speculations of Mr. Godwin, M. Condorcet, and Other Writers*. Robert Malthus' *Essay* explored the consequences of his basic thesis that "the power of population is indefinitely greater than the power in the earth to produce subsistence for man".

"That population cannot increase without the means of subsistence", Robert Malthus wrote, "is a proposition so evident that it needs no illustration. That population does invariably increase, where there are means of subsistence, the history of every people who have ever existed will abundantly prove. And that the superior power cannot be checked without producing misery and vice, the ample portion of these two bitter ingredients in the cup of human life, and the continuance of the physical causes that seem to have produced them, bear too convincing a testimony."

In order to illustrate the power of human populations to grow quickly to enormous numbers if left completely unchecked, Malthus turned to statistics from the United States, where the population had doubled every 25 years for a century and a half. Malthus called this type of growth “geometrical” (today we would call it “exponential”); and, drawing on his mathematical education, he illustrated it by the progression 1,2,4,8,16,32,64,128,256,...etc. In order to show that, in the long run, no improvement in agriculture could possibly keep pace with unchecked population growth, Malthus allowed that, in England, agricultural output might with great effort be doubled during the next quarter century; but during a subsequent 25-year period it could not again be doubled. The growth of agricultural output could at the very most follow an arithmetic (linear) progression, 1,2,3,4,5,6,...etc.

Because of the overpoweringly greater numbers which can potentially be generated by exponential population growth, as contrasted to the slow linear progression of sustenance, Malthus was convinced that at almost all stages of human history, population has not expanded freely, but has instead pressed painfully against the limits of its food supply. He maintained that human numbers are normally held in check either by “vice or misery”. (Malthus classified both war and birth control as forms of vice.) Occasionally the food supply increases through some improvement in agriculture, or through the opening of new lands; but population then grows very rapidly, and soon a new equilibrium is established, with misery and vice once more holding the population in check.

Like Godwin’s *Political Justice*, Malthus’ *Essay on the Principle of Population* was published at exactly the right moment to capture the prevailing mood of England. In 1793, the mood had been optimistic; but by 1798, hopes for reform had been replaced by reaction and pessimism. Public opinion had been changed by Robespierre’s Reign of Terror and by the threat of a French invasion. Malthus’ clear and powerfully written essay caught the attention of readers not only because it appeared at the right moment, but also because his two contrasting mathematical laws of growth were so striking.

One of Malthus’ readers was William Godwin, who recognized the essay as the strongest challenge to his utopian ideas that had not yet been published. Godwin several times invited Malthus to breakfast at his home to discuss social and economic problems. (After some years, however, the friendship between Godwin and Malthus cooled, the debate between them having become more acrimonious.)

In 1801, Godwin published a reply to his critics, among them his former friends James Mackintosh and Samuel Parr, by whom he recently had been attacked. His ‘Reply to Parr’ also contained a reply to Malthus: Godwin granted that the problem of overpopulation raised by Malthus was an extremely serious one. However, Godwin wrote, all that is needed to solve the problem is a change of the attitudes of society. For example we need to abandon the belief “that it is the first duty of princes to watch for (i.e. encourage) the multiplication of their subjects, and that a man or woman who passes the term of life in a condition of celibacy is to be considered as having failed to discharge the principal obligations owed to the community”.

“On the contrary”, Godwin continued, “it now appears to be rather the man who rears a numerous family that has to some degree transgressed the consideration he owes to the public welfare”. Godwin suggested that each marriage should be allowed only two or three children or whatever number might be needed to balance the current rates of mortality and celibacy. This duty to society, Godwin wrote, would surely not be too great a hardship to be endured, once the reasons for it were thoroughly understood.

4. The Second Essay, Published in 1803

Malthus’ small essay had captured public attention in England, and he was anxious to expand it with empirical data which would show his principle of population to be valid not only in England in his own day, but in all societies and all periods. He therefore traveled widely, collecting data. He also made use of the books of explorers such as Cook and Vancouver.

Malthus’ second edition, more than three times the length of his original essay on population, was ready in 1803. Book I and Book II of the 1803 edition of Malthus’ “Essay” are devoted to a study of the checks to population growth which have operated throughout history in all the countries of the world for which he possessed facts.

In his first chapter, Malthus stressed the potentially enormous power of population growth and contrasted the slow growth of food supply. He concluded that strong checks to the increase of population must almost always be operating to keep human numbers within the bounds of sustenance. He classified the checks as either preventive or positive, the preventive checks being those which reduce fertility, while the positive checks are those which increase mortality. Among the positive checks, Malthus listed “unwholesome occupations, severe labour and exposure to the seasons, extreme poverty, bad nursing of children, great towns, excesses of all kinds, the whole train of common diseases and epidemics, wars, plague, and famine”.

In the following chapters of Book I, Malthus showed in detail the mechanisms by which population is held at the level of sustenance in various cultures. He first discussed primitive hunter-gatherer societies, such as the inhabitants of Tierra del Fuego, Van Diemens Land and New Holland, and those tribes of North American Indians living predominantly by hunting. In hunting societies, he pointed out, the population is inevitably very sparse: “The great extent of territory required for the support of the hunter has been repeatedly stated and acknowledged”, Malthus wrote, “...The tribes of hunters, like beasts of prey, whom they resemble in their mode of subsistence, will consequently be thinly scattered over the surface of the earth. Like beasts of prey, they must either drive away or fly from every rival, and be engaged in perpetual contests with each other...The neighboring nations live in a perpetual state of hostility with each other. The very act of increasing in one tribe must be an act of aggression against its neighbors, as a larger range of territory will be necessary to support its increased numbers. The contest will in this case continue, either till the equilibrium is restored by mutual losses, or till the weaker party is exterminated or driven from its country... Their object in battle is not conquest but destruction. The life of the victor depends on the

death of the enemy". Malthus concluded that among the American Indians of his time, war was the predominant check to population growth, although famine, disease and infanticide each played a part.

In the next chapter, Malthus quoted Captain Cook's description of the natives of the region near Queen Charlotte's Sound in New Zealand, whose way of life involved perpetual war. "If I had followed the advice of all our pretended friends", Cook wrote, "I might have extirpated the whole race; for the people of each hamlet or village, by turns, applied to me to destroy the other". According to Cook, the New Zealanders practiced both ceaseless war and cannibalism; and population pressure provided a motive for both practices.

In later chapters on nomadic societies of the Near East and Asia, war again appears, not only as a consequence of the growth of human numbers, but also as one of the major mechanisms by which these numbers are reduced to the level of their food supply. The studies quoted by Malthus make it seem likely that the nomadic Tartar tribes of central Asia made no use of the preventive checks to population growth. In fact the Tartar tribes may have regarded growth of their own populations as useful in their wars with neighboring tribes.

Malthus also described the Germanic tribes of Northern Europe, whose population growth led them to the attacks which destroyed the Roman Empire. He quoted the following passage from Machiavelli's *History of Florence*: "The people who inhabit the northern parts that lie between the Rhine and the Danube, living in a healthful and prolific climate, often increase to such a degree that vast numbers of them are forced to leave their native country and go in search of new habitations. When any of those provinces begins to grow too populous and wants to disburden itself, the following method is observed. In the first place, it is divided into three parts, in each of which there is an equal portion of the nobility and commonality, the rich and the poor. After this they cast lots; and that division on which the lot falls quits the country and goes to seek its fortune, leaving the other two more room and liberty to enjoy their possessions at home. These emigrations proved the destruction of the Roman Empire". Regarding the Scandinavians in the early middle ages, Malthus wrote: "Mallet relates, what is probably true, that it was their common custom to hold an assembly every spring for the purpose of considering in what quarter they should make war".

In Book II, Malthus turned to the nations of Europe, as they appeared at the end of the 18th century, and here he presents us with a different picture. Although in these societies poverty, unsanitary housing, child labour, malnutrition and disease all took a heavy toll, war produced far less mortality than in hunting and pastoral societies, and the preventive checks, which lower fertility, played a much larger role.

Malthus had visited Scandinavia during the summer of 1799, and he had made particularly detailed notes on Norway. He was thus able to present a description of Norwegian economics and demography based on his own studies. Norway was remarkable for having the lowest reliably-recorded death rate of any nation at that time: Only 1 person in 48 died each year in Norway. (By comparison, 1 person in 20 died each year in London.) The rate of marriage was also remarkably low, with only 1 marriage each year for every 130 inhabitants;

and thus in spite of the low death rate, Norway's population had increased only slightly from the 723,141 inhabitants recorded in 1769.

There were two reasons for late marriage in Norway: Firstly, every man born of a farmer or a labourer was compelled by law to be a soldier in the reserve army for a period of ten years; and during his military service, he could not marry without the permission of both his commanding officer and the parish priest. These permissions were granted only to those who were clearly in an economic position to support a family. Men could be inducted into the army at any age between 20 and 30, and since commanding officers preferred older recruits, Norwegian men were often in their 40s before they were free to marry. At the time when Malthus was writing, these rules had just been made less restrictive; but priests still refused to unite couples whose economic foundations they judged to be insufficient.

The second reason for late marriages was the structure of the farming community. In general, Norwegian farms were large; and the owner's household employed many young unmarried men and women as servants. These young people had no chance to marry unless a smaller house on the property became vacant, with its attached small parcel of land for the use of the "houseman"; but because of the low death rate, such vacancies were infrequent. Thus Norway's remarkably low death rate was balanced by a low birth rate. Other chapters in Book II are devoted to the checks to population growth in Sweden, Russia, Central Europe, Switzerland, France, England, Scotland and Ireland.

Malthus painted a very dark panorama of population pressure and its consequences in human societies throughout the world and throughout history: At the lowest stage of cultural development are the hunter-gatherer societies, where the density of population is extremely low. Nevertheless, the area required to support the hunters is so enormous that even their sparse and thinly scattered numbers press hard against the limits of sustenance. The resulting competition for territory produces merciless intertribal wars. The domestication of animals makes higher population densities possible; and wherever this new mode of food production is adopted, human numbers rapidly increase; but very soon a new equilibrium is established, with the population of pastoral societies once more pressing painfully against the limits of the food supply, growing a little in good years, and being cut back in bad years by famine, disease and war.

"Malthus was conscious that he had drawn an extremely dark picture of the human condition... he was convinced that the dark shades really are there, and that they form an important part of the picture."

Finally, agricultural societies can maintain extremely high densities of population; but the time required to achieve a new equilibrium is very short. After a brief period of unrestricted growth, human numbers are once more crushed against the barrier of limited resources; and if excess lives are produced by overbreeding, they are soon extinguished by deaths among the children of the poor.

Malthus was conscious that he had drawn an extremely dark picture of the human condition. He excused himself by saying that he has not done it gratuitously, but because he was convinced that the dark shades really are there, and that they form an important part of the picture. He did allow one ray of light, however: By 1803, his own studies of Norway, together with personal conversations with Godwin and the arguments in Godwin's "Reply to Parr", had convinced Malthus that "moral restraint" should be included among the possible checks to population growth. Thus he concluded Book II of his 1803 edition by saying that the checks which keep population down to the level of the means of subsistence can all be classified under the headings of "moral restraint, vice and misery". (In his first edition he had maintained that vice and misery are the only possibilities).

5. Avoiding the Terrible Malthusian Forces

Malthus died in Bath in 1834, but debate on his ideas continued to rage, both in his own century and our own. Each year he is refuted, and each year revived. Despite impressive scientific progress since his time, the frightful Malthusian forces – poverty, famine, disease, and war – cast as dark a shadow in our own times as they did in the nineteenth century. Indeed, the enormous power of modern weapons has greatly intensified the dangers posed by war; and the rapid growth of global population has given new dimensions to the problems of poverty and famine.

Looking at the world today, we can see regions where Malthus seems to be a truer prophet than Condorcet and Godwin. In most developing countries, poverty and disease are still major problems. In other parts of the world, the optimistic prophecies of Condorcet and Godwin have been at least partially fulfilled. In the industrialized nations, Godwin's prophecy of automated agriculture has certainly come true. In the nations of the North, only a small percentage of the population is engaged in agriculture, while most of the citizens are free to pursue other goals than food production.

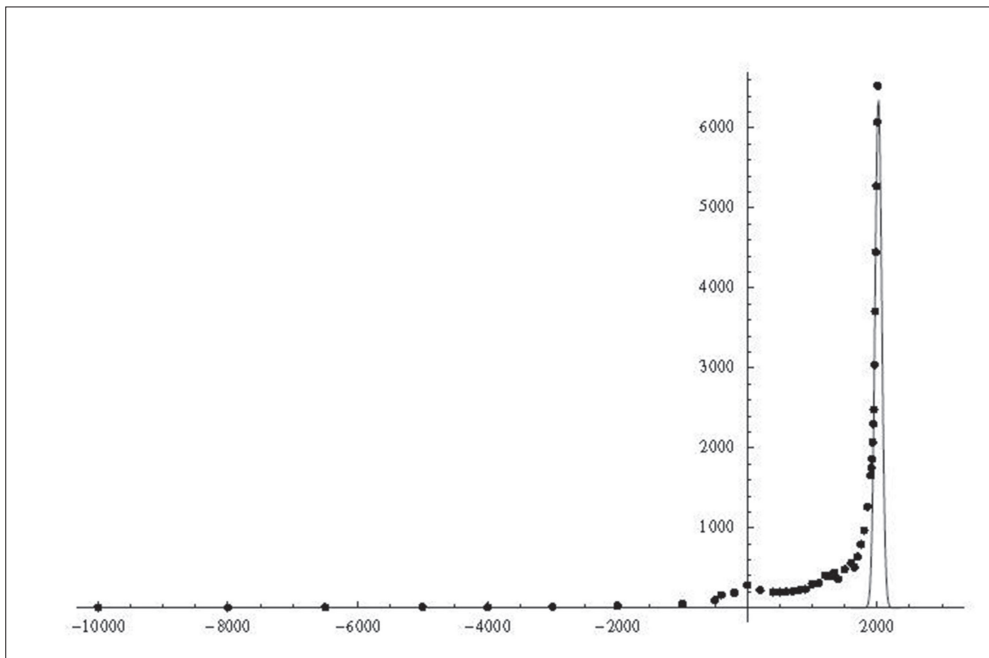
Scandinavia is an example of an area where poverty and war have both been eliminated locally, and where death from infectious disease is a rarity. These achievements would have been impossible without the low birth rates which also characterize the region. In Scandinavia, and in other similar regions, low birth rates and death rates, a stable population, high educational levels, control of infectious disease, equal status for women, democratic governments, and elimination of poverty and war are linked together in a mutually re-enforcing circle of cause and effect.

By contrast, in many large third-world cities, overcrowding, contaminated water, polluted air, dense population without adequate sanitation, low status of women, high birth rates, rapidly increasing population, high unemployment levels, poverty, crime, ethnic conflicts, and resurgence of infectious disease are also linked in a self-perpetuating causal loop, in this case a vicious circle.

6. Population Stabilization and Sustainability

Has the number of humans in the world already exceeded the earth's sustainable limits? Will the global population of humans crash catastrophically after having exceeded the carrying capacity of the environment? There is certainly a danger that this will happen – a danger that the 21st century will bring very large scale famines to vulnerable parts of the world, because modern energy-intensive agriculture will be dealt a severe blow by prohibitively high petroleum prices, and because climate change will reduce the world's agricultural output. When the major glaciers in the Himalayas have melted, they will no longer be able to give India and China summer water supplies; rising oceans will drown much agricultural land; and aridity will reduce the output of many regions that now produce much of the world's grain. Falling water tables in overdrawn aquifers, and loss of topsoil will add to the problem. We should be aware of the threat of a serious global food crisis in the 21st century if we are to have a chance of avoiding it.

Figure 1: Human Population Growth and Fossil Fuel Use*



* This graph shows human population growth and fossil fuel use, seen on a time-scale of several thousand years. The dots are population estimates in millions from the US Census Bureau. Fossil fuel use appears as a spike-like curve, rising from almost nothing to a high value, and then falling again to almost nothing in the space of a few centuries. When the two curves are plotted together, the explosive rise of global population is seen to be simultaneous with, and perhaps partially driven by, the rise of fossil fuel use. This raises the question of whether the world's population is headed for a crash when the fossil fuel era has ended. As an example of the dependence of modern agriculture on fossil fuels, we can consider the US food system, which has been shown by Mario Giampietro and David Pimentel to require more than 10 fossil fuel calories for every food calorie provided. High-yield grain varieties require heavy use of petroleum-derived fertilizers and pesticides. Modern farm machinery is driven by petroleum. If tractors are replaced by draft animals in the future, these animals will require land for pasturage. Furthermore, when synthetic fibers derived from petroleum or coal are no longer available, cropland will have to be diverted from agriculture to growing natural fibers for clothing. Thus there is a danger that the end of the fossil fuel era will lead to widespread famine. Population growth, climate change, and water shortages will add to the severity of this danger.

We can anticipate that as the earth's human population approaches 10 billion, severe famines will occur in many developing countries. The beginnings of this tragedy can already be seen. It is estimated that roughly 40,000 children now die every day from starvation, or from a combination of disease and malnutrition.

Rather than an increase in the global area of cropland, we may encounter a future loss of cropland through soil erosion, salination, desertification, loss of topsoil, depletion of minerals in topsoil, urbanization and failure of water supplies. In China and in the southwestern part of the United States, water tables are falling at an alarming rate. The Ogallala aquifer (which supplies water to many of the plains states in the central and southern parts of the United States) has a yearly overdraft of 160%. Falling water tables form the background for China's stringent population policy.

It may seem surprising that fresh water can be regarded as a non-renewable resource. However, groundwater in deep aquifers is often renewed very slowly. Sometimes, renewal requires several thousand years. When the rate of withdrawal of groundwater exceeds the rate of renewal, the carrying capacity of the resource has been exceeded, and withdrawal of water becomes analogous to mining a mineral. However, it is more serious than ordinary mining because water is such a necessary support for life.

In the 1950s, both the U.S.S.R. and Turkey attempted to convert arid grasslands into wheat farms. In both cases, the attempts were defeated by drought and wind erosion, just as the wheat farms of Oklahoma were overcome by drought and dust in the 1930s.

If irrigation of arid lands is not performed with care, salt may be deposited, so that the land is ruined for agriculture. This type of desertification can be seen, for example, in some parts of Pakistan. Another type of desertification can be seen in the Sahel region of Africa, south of the Sahara. Rapid population growth in the Sahel has led to overgrazing, destruction of trees, and wind erosion, so that the land has become unable to support even its original population.

Especially worrying is a prediction of the International Panel on Climate Change concerning the effect of global warming on the availability of water: According to Model A1 of the IPCC, global warming may, by the 2050s, have reduced by as much as 30% the water available in large areas of the world that now are important producers of grain. These regions include much of the United States, Brazil, the Mediterranean region, Eastern Russia and Belarus, the Middle East, Southern Africa and Australia.

Added to the agricultural and environmental problems, are problems of finance and distribution. Famines can occur even when grain is available somewhere in the world, because those who are threatened with starvation may not be able to pay for the grain, or for its transportation. The economic laws of supply and demand are not able to solve this type of problem. One says that there is no "demand" for food (meaning demand in the economic sense), even though people are in fact starving.

Thus there is a danger that just as global population reaches the unprecedented level of 10 billion or more, the agricultural base for supporting it may suddenly collapse. Ecological

catastrophe, possibly compounded by war and other disorders, could produce famine and death on a scale unprecedented in history, a disaster of unimaginable proportions, involving billions rather than millions of people.

The resources of the earth and the techniques of modern science can support a global population of moderate size in comfort and security; but the optimum size is undoubtedly smaller than the world's present population. Given a sufficiently small global population, renewable sources of energy can be found to replace disappearing fossil fuels. Technology may also be able to find renewable substitutes for many disappearing mineral resources for a global population of a moderate size. What technology cannot do, however, is to give a global population of 10 billion people the standard of living which the industrialized countries enjoy today.

What would Malthus tell us if he were alive today? Certainly he would say that we have reached a period of human history where it is vital to stabilize the world's population if catastrophic environmental degradation and famine are to be avoided. He would applaud efforts to reduce suffering by eliminating poverty, widespread disease, and war; but he would point out that, since it is necessary to stop the rapid increase of human numbers, it follows that whenever the positive checks to population growth are removed, it is absolutely necessary to replace them by preventive checks. Malthus' point of view became more broad in the successive editions of his "Essay"; and if he were alive today, he would probably agree that family planning is the most humane of the preventive checks.

In Malthus' *Essay on the Principle of Population*, population pressure appears as one of the main causes of war; and Malthus also discusses many societies in which war is one of the principal means by which population is reduced to the level of the food supply. Examples of this are Cook's description of constant warfare among the Maori people of New Zealand, and the connection between population growth and war in Machiavelli's description of the Germanic tribes. (In our own time, Michael Klare has documented the close connection between war and the competition for scarce resources.) Thus, the "Essay on Population" contains another important message for our own times: If he were alive today, Malthus would also say that there is a close link between the two most urgent tasks which history has given to the 21st century: stabilization of the global population, and abolition of the institution of war.

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Suggestions for Further Reading

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Multiplying Money

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Abstract

This article is not a comprehensive factual history of money as an economic instrument. It aims rather to present an essential psychological history of the power of money as a social organization or social technology. It explores the catalytic role of money in the development of society and its ever-increasing capacity for accomplishment in both economic and non-economic fields. This perspective focuses attention on the unutilized potential for harnessing the social power of money for promoting full employment, global development and human welfare. The title 'multiplying money' is intended to convey the idea that this untapped potential is exponential in nature. In order to recognize it, some fundamental misconceptions about the nature of money, how it is created and on what it is based need to be examined. This is the second article in a series.

1. Too Much or Too Little

The idea of multiplying money sounds almost sacrilegious. It evokes responses similar to what one might expect if an English clergyman were to preach the virtues of polygamy or an Indian demographer were to urge people to bear more children or an international economist were to propose that gambling and speculation be promoted as a major growth sector. Today the world is glutted with money. Witness the \$4.6 trillion circling the globe daily in search of higher speculative returns or the \$225 trillion in global financial assets, up from a mere \$12 trillion in 1980.¹ Yet, far from having too much, the world has far too little money, too little at least that is being used for its intended purpose to promote human welfare. But the merest hint about creating more money raises shouts of alarm, suspicions of conspiracy and a rush of investors to safe havens such as gold, land and other 'real' forms of wealth.

It is not surprising that the rich and famous protest against efforts to multiple money, for they presently enjoy a near monopoly in this domain and any extension of that privilege risks depriving them of the major source of social power and prestige that distinguishes them from everyone else. Imagine a conclave of dukes and earls advocating the multiplication of titled families or an assembly of physicians advocating that the number of licensed doctors in USA be tripled to bring down the costs of medical care. But ironically, it is not just the wealthy alone who resist the multiplication of money. Almost everyone else regards it with equal suspicion as an assault on common sense or sacred values. 'Beware of inflation! Remember Weimar Germany!' proclaims the man in the street born 30 years after the event, as if he has

been studying monetary theory all his life. 'Gold is the only real wealth' cries his wife as she clings to her gold wedding ring. 'It's another Wall Street conspiracy to exploit depositors and raise taxes,' insists another.

Scratch the surface and most people will tell you that a tight leash on money is a real virtue, a sign of stability and security, something you can rely on precisely because it resists change, a reassurance that greed, folly and imagination are not running away from us. This thinking is consistent with the original mindset with which the science of economy was founded at a time when wealth was confined to 10,000 families in England, the middle class was miniscule, and the vast majority scratched out a subsistence existence. Economics was founded as the science of scarcity. Although we now live in a world with the capacity to produce all types of goods and services in sufficient quantity to meet the needs of every human being, the mentality of scarcity still overshadows our thinking on the subject of both money and economy and stands as a brick wall between the human race and abundant prosperity.

The fact remains that there is not too much money in the world, but too little. At least that is what the American colonists concluded three centuries ago. Money was a revolutionary invention and a source of revolutions as well. One of the little known causes of the American Revolution was the lack of money. The Revolution was fought for the cause of freedom and one of the most prominent kinds of freedom the colonists sought was freedom to create money. England insisted that only British sterling be used as a medium of exchange in its colonies, but the colonies could not generate sufficient sterling from their one-sided trade with England, so they resorted to using Spanish dollars to supplement sterling. When this practice was banned by London, they resorted to furs, tobacco leaves, and even wampum beads as a supplementary medium of exchange. In desperation, the Massachusetts Bay Colony in 1690 became the first of the American colonies and one of the first governments in modern times to print their own paper currency notes denominated in pounds, shillings and pence. The practice was soon followed by all the other colonies. The British Parliament eventually outlawed the practice as both illegal and immoral in a series of acts, the last and most drastic completely banning the use of legal tender paper in 1764. War ensued as the result of a perpetual shortage of money to transact trade.²

Today a similar revolution is brewing in the streets of Athens, Cyprus, Egypt, Madrid, Rome and Lisbon, and among rising numbers of unemployed youth in towns and villages throughout the world. The cause célèbre is the first major crisis affecting the world's most important experiment to move beyond national currencies towards a truly global system – the Euro. The source of the problem is not any inherent deficiency in the concept of a regional currency, but in the inadequate development of European institutions of governance to support its successful application. Having relinquished their right to create money at the national level, member states of the Eurozone have encountered the very same problem that plagued the American colonies before independence – an incapacity to generate all the money that is necessary to support full utilization of their economic potential to meet the needs of their people. These nations possess the essential ingredients to continue their remarkable rise from the ashes of WWII to become the most prosperous region in the world. What they now

lack is the necessary catalyst – money. What is true of some nations of the Eurozone today is true of the world as a whole.

Economist Paul Krugman has been making a similar argument with regard to the US economy for years, citing zero interest rates and low inflation as clear symptoms that something is amiss. Randall Wray, a major proponent of Modern Monetary Theory (MMT), has provided a sound framework to explain why there is ample scope and justification for creating sufficient money to achieve full employment.³ Although it directly challenges proponents of balanced budgets and tight monetary policy, MMT is gaining significant attention and support. In a web presentation to the World Academy's Global Employment Challenge as well as in books and numerous articles, Wray explained why sovereign nations with full control over their own currencies can and should create sufficient money to ensure their economies function at full employment. But let us reserve the theory for a subsequent article and start by examining the facts.

"The more we use money, the more it multiplies and the greater the power it acquires for accomplishment in society."

2. The Great Catalyst

Money is a catalyst for economic activity, in the same way words are a catalyst for communication. Without language, interaction, cooperation and relationship between people would be reduced to physical gestures and signs at particular points in space and time. The gathering and transmission of information, organization and transfer of knowledge, dissemination of technologies, codification of laws, formalization of governance, diffusion of cultures, formulation of philosophies and recording of religious experiences and inspiration would be impossible without symbolic language. In the absence of the power of ideas made possible by language, these remarkable human capacities would be literally 'unthinkable'.

Catalysts are a mysterious phenomenon. They facilitate and accelerate transactions without being altered in the process. A catalyst enables chemicals to interact with one another to produce entirely new substances, leaving the catalyst just as it was before. Without them, many reactions occur very slowly or not at all. It seems almost inconceivable that a thing so potent could remain unchanged and undiminished by the function it serves. Indeed, *when it comes to social catalysts such as language and money, each usage adds incrementally to its power and effectiveness. The more we use a language, the more it grows in subtlety and sophistication. The more we use money, the more it multiplies and the greater the power it acquires for accomplishment in society.*

Money plays a catalytic role in society, facilitating exchange, promoting enterprise, stimulating production, spurring innovation and invention. Before money, most of humanity lived at or below subsistence levels producing only enough to meet the immediate requirements of their families for self-sufficiency and for local barter exchange. *Money and trade changed all that. They provided an incentive for each person to produce the maximum of which they were capable, so that it could be converted into money and used to obtain a wide*

range of other goods, services and intangible social benefits produced by others. Thus, Adam Smith termed money as ‘the great wheel of circulation, the great instrument of commerce’.⁴

3. Untapped Global Potential

Any economy needs sufficient liquid money to facilitate full utilization of its productive capacities. A casual examination of the facts makes it abundantly clear that the world economy is far from operating at full production. According to official statistics, about 200 million people are unable to find opportunities for gainful employment. Nearly 75 million of them are below the age of 25 with dismal prospects for the future.⁵ The actual figures are much higher. Many people are forced to settle for work that utilizes only a small fraction of their productive capacities. While underemployment is difficult to measure accurately, the magnitude of the problem is clearly reflected by the fact that only 40% of the global workforce is employed full time.⁶ When underemployment is taken into account, it is reasonable to assume that more than one-third of the world’s human capital remains unutilized.

What is true of people is equally true of other productive resources. Society is an organization of human beings with the capacity to utilize knowledge, skills, technology, human and other resources to meet a wide range of human needs for production, exchange and consumption; peace, security and governance; transport and communication; health and education; scientific pursuits, artistic creativity, entertainment and recreation. Today global society has immense resources – a rapidly expanding body of scientific knowledge and technological capabilities, educational and training institutions; an ever-expanding network for communication and transportation connecting individuals, organizations and communities around the world; an enormous base of manufacturing facilities functioning far below capacity; and so much more. None of these productive resources are being fully utilized for human welfare.

Even our environmental problems are directly linked to a shortage of money. The world already possesses the technological capacity to effectively address climate change, water shortages and other ecological challenges. Massive investments in solar and other forms of renewable energy could soon make reliance on fossil fuels obsolete, if only we had the capacity to mobilize sufficient money needed for that investment. Actually those financial resources already exist but are being utilized to aggravate ecological problems rather than resolve them. A new IMF report estimates that global energy subsidies amount to a staggering \$1.9 trillion worldwide – the equivalent of 2.5% of global GDP, or 8% of total government revenues. Moreover a considerable portion of these subsidies goes to the top income group.⁷

Global society is operating at far below the level required to fully meet human needs. Unprecedented prosperity co-exists side by side with three billion people still mired in persistent poverty – a number equivalent to the entire world population in 1950. The gap between needs and performance has always existed. But the difference is that the world now possesses the capacity to meet all those needs. Poverty was once an accepted, unchanging reality of life to which people resigned. Today that is no longer the case. The Human Aspiration is awake, expectations of a better life have percolated to all parts of the world and all levels of society. People are no longer either resigned or patient. Even in the poorest democratic societies, they

want and urgently demand more. The signs of brewing revolution are reflected in the rising levels of discontent and unrest among unemployed youth and low income voters, among the rural landless and the urban poor, among the educated unemployed and the unskilled.

“Like a chemical catalyst stored in a separate beaker standing next to the reactants it is intended to catalyze, a vast portion of money today is being stored separately in financial markets insulated from the real economy.”

The catalytic role of money in mobilizing social resources to tap unutilized potential was dramatically illustrated in the town of Woergl, Austria, during the 1930s. At the height of the Great Depression, the economy of Woergl was at a standstill, public spending was drastically cut, and unemployment reached 25%. The mayor of Woergl devised an ingenious plan to revive the local economy. He deposited the entire town’s money in the local bank and used that deposit as the basis for creating local labor certificates, which he utilized to finance public works. The certificates quickly gained public acceptance because they could be utilized as legal tender to pay local taxes. Many important public works projects were undertaken using the certificates to pay local workers. The workers in turn presented the certificates to retailers in exchange for essential goods, and the stores used them to purchase materials from local wholesalers and manufacturers, who used them for further exchange as well as to pay local taxes. A one percent negative interest rate on the certificates ensured that people spent them quickly rather than saving them, leading to a very rapid turnover of funds, which further multiplied their catalytic economic impact. Very soon, the town economy was booming and reached full employment. Woergl’s success continued until the Central Bank of Austria decided that its sole authority to issue money had been compromised and declared the experiment unlawful. In a short time, unemployment in Woergl rose back to previous levels.

Today’s global economy is flush with money, but too little of it is being utilized for the intended purpose as a catalyst for the real economy. Like a chemical catalyst stored in a separate beaker standing next to the reactants it is intended to catalyze, a vast portion of money today is being stored separately in financial markets insulated from the real economy, seeking to multiply itself through speculative investment rather than by catalyzing real economic activity and employment generation. The barriers between the real economy and financial markets are porous, their interactions myriad and complex, so it is always possible to dispute this view by pointing to the positive role of financial markets in pooling capital for productive private investments, managing risks, extending credit and financing public goods. But the membrane separating the two grows ever thicker and less porous, their estrangement ever greater and closer to irreconcilable divorce.

The world already possesses the capacity to generate all the financial resources it needs to fully meet human needs. The problem is that we do not know it or rather we do not know how to design our social systems to effectively utilize it. The prevailing view of money is

so completely obscured by myth, superstition and intellectual confusion that untangling the web leads only to further confusion, debate and controversy between established dogmas and conventional wisdom. The solution lies in dispensing with dogma. The key lies in finding the answers to the following questions: What is money? How is it created? On what is it based?

4. Caveat

A caveat is necessary before we can attempt to answer these questions. Money is one of the most sophisticated and powerful of all human inventions. It takes many forms, it evolves continuously over time, and it interacts in increasingly complex ways with virtually every other aspect of human social existence. The theories formulated to describe and explain it, the systems used to administer and control it, and the multiplicity of its forms and actions appear bewildering in their complexity; so much so that most people, including most economists, have decided that understanding money must be left to monetary specialists, much as we leave speculations and research on the Higgs boson to theoretical physicists. This perception is a major source of our difficulty in managing money effectively. For regardless of how money is defined in economic textbooks, it is not merely or even primarily an economic instrument. Money is a social invention, a psychological symbol, rather than a material thing. It is a human social system based on social rules and human choice, not an inanimate, lifeless mechanism. Its one and sole legitimate purpose is to promote the welfare of human beings. The moment we lose sight of these facts and begin to regard money as some mysterious abstract entity to be worshipped or feared, we lose the power to comprehend and control it. We lose our freedom as creative human beings and become subordinate or enslaved to the instrument we have created.

There is an additional complication in striving to understand money. Money and those who possess it have always been targets of envy, jealousy, suspicion, hostility and persecution. This is especially true in periods of financial turmoil, such as the present day. In the wake of the subprime mortgage crises, the ensuing global financial crisis and the persistent economic downturn, the deficiencies, inequities and abuses of money and financial systems have been so highly publicized and well-documented that public discourse is most often characterized by scathing criticism, vilification or outright condemnation. Bankers, Wall Street traders, government officials, corporate executives and wealthy investors have become the scapegoats for all that is inadequate, unfair, inequitable and corrupt about the national and global economic system. This makes it extremely difficult to engage in an objective, impartial examination of money and its role in society.

Every social institution can be used both positively or negatively, for good or for bad. The language we use to communicate and forge rich human relations can also be used to disguise, deceive, slander and condemn, to hatch conspiracies and undertake crimes. The governments we found to secure our freedom can also be used to oppress and deprive us of that very freedom. The global Internet which has empowered individual human beings as never before can also be used to promote scams, viruses, crime and terrorism.

So too, money is a neutral instrument which can be used to create unprecedented freedom of choice, prosperity, welfare and well-being for all human beings or it can be misused to

serve other less noble, less equitable and desirable purposes. We do not condemn and reject the institution of language because it is also used by criminals and terrorists. We do not reject the principles of democracy because it so imperfectly embodies in practice the ideals on which it is founded. We do not shut down the internet because it is used for anti-social purposes. Instead, we strive to develop ways to extend its positive applications and minimize or eliminate its negative expressions as far as possible.

“Money, like democracy, is a work in progress – imperfect in its structure, often misdirected and misapplied in the exercise of its power – but nevertheless a remarkable invention that has resulted in unprecedented wealth generation and welfare.”

Thus, in examining the origins and evolution of money as a social institution, we need to recall that money, like democracy, is a work in progress – imperfect in its structure, often misdirected and misapplied in the exercise of its power – but nevertheless a remarkable invention that has resulted in unprecedented wealth generation and welfare. It is necessary that we keep in mind the remarkable contribution money has made to human development, the power it has placed at the disposal of human beings, and the vast untapped potential for extending and multiplying that power until its benefits fully reach all humanity. Then we will be in a position to impartially identify and correct the many blatant deficiencies and gross inequities that have been generated by the partial and biased misapplication of a power that is rightly intended to promote the equitable development of all.

5. Origin and First Principles of Money

Let us approach the issue of money from first principles, starting with a few basic premises. First, society is an organization of human beings which possesses power to utilize knowledge, skills, technology, human and other resources to promote the survival, security, growth and development of its members. Among these powers is society’s ever-growing capacity for production, exchange and consumption. The development of a society is a function of the degree to which it has acquired the capacity to harness this social power to evolve beyond a subsistence level existence in Nature. The greater its capacity to raise the productivity of resources – land, human labor, mechanical energy and natural resources – the more economically advanced the society becomes. The discovery of fire, creation of languages, invention of the wheel, development of agriculture, establishment of markets and trade routes for exchange of goods, founding of towns and cities are some of the significant early steps in the evolution of social power. During the past two centuries global society has harnessed this power to dramatically raise the living standards of a rapidly expanding human population, generating an eight-fold multiplication in real global per capita income.

Money is one of the primary instruments responsible for this remarkable achievement. The invention of money has played a central part in the general evolution of social organization and social power. Money is a social organization relating people, institutions,

communities and activities together in a seamless web. Money is not merely an economic tool or institution. It is integrated with virtually every field of social activity – law and politics, education and research, entertainment and recreation, religion and spirituality. Money is a social technology that facilitates, expedites and improves the efficiency of all types of social transactions, the way language facilitates oral and written communications and the Internet facilitates global communications and digital transactions.

Money is a social symbol. It is social in the sense that it has no value to a single person living alone on a deserted island. It is a symbol in the sense that it is not merely an object like a stone or a gem. Money may or may not be represented by objects with intrinsic value, but it always represents something beyond the material form it takes. Money is a symbol for value and its power derives solely from the fact that people recognize and accept that symbolic value, the way we accept the symbolic value of the word ‘love’ or ‘truth’. The value of money depends entirely on human perceptions, i.e. on the fact that it is trusted and accepted by other people. Real currency notes believed to be counterfeit are essentially worthless as a medium of exchange, just as counterfeit notes believed to be real are indistinguishable in their utility from government issued currency notes.

The symbolic nature of money is obscured by its origin as a physical commodity. Although early money often took the form of something with intrinsic value – a cow, a bag of grain, a gold nugget – its utility as money did not depend on that. Indeed, the archeological evidence of clay tablets indicates that the earliest forms of money may have simply been records of credits and debits, which were in use long before the first appearance of minted metal coins around 600 BC.⁸ Whatever its origin, money gradually evolved to acquire new forms which were more subtle, less material. The grain receipt was an early form of money issued in exchange for the deposit of grain in government and private warehouses in ancient Egypt. These receipts were accepted, circulated and widely employed as a medium of exchange and store of value. Public confidence in the issuer of the receipts made it possible for warehouses to also issue receipts that were not backed by grain as loans to borrowers. Thus, the first fiat money was born in the distant past.

From the 15th Century onwards, London goldsmiths applied the same principle when they issued gold receipts in the form of interest bearing loans, often far in excess of the actual quantity of gold left with them on deposit. Because they were known to be wealthy merchants with huge stocks of gold, the public trusted their receipts without verifying whether each one was backed by real gold. As long as that trust was maintained, their receipts were widely accepted as money and infrequently redeemed for the underlying commodity. Note the subtle shift from trust in the gold to trust in the institutions that stored the gold and were reputed for their sound management and integrity. The goldsmith bankers of London reached the zenith of their influence during the mid-17th century.⁹

The notion that money is or should be based entirely on a physical commodity is a misconception that persisted well into the 20th century and still returns periodically. Some monetary historians argue that precious metal was added to early coins primarily to make coins more difficult and expensive to counterfeit, rather than due to the belief that precious

metal was necessary to give money value. Even at the height of the Gold Standard when the British pound sterling was regarded as the strongest, most stable currency in the world, the Bank of England possessed sufficient gold to redeem only about 5% of the notes in circulation. After being compelled to abandon the gold standard during the First World War, in 1925, Churchill pushed through legislation to restore it against the advice of Keynes, who called it an ‘imbecile’ bill. The ensuing economic contraction compelled the UK to abandon the gold standard once again in 1931.

“Human relations are the real basis for wealth creation.”

6. Evolution from Field to Marketplace

The primary role of money is as a catalyst for relationships between people. Human relations are the real basis for wealth creation. The physical labor of the hunter, herdsman and farmer was indeed the original source of wealth and welfare in humanity’s early ascent from the animal kingdom. At that time wealth was commonly measured in terms of heads of livestock or acres of arable land. But long ago they ceased to be the principal source of wealth creation. Various agricultural revolutions throughout history have enhanced the capacity of farmers to produce more than they needed for personal consumption. As soon as they developed the capacity to generate surpluses, they sought ways to exchange their surplus for other things they needed to enhance their security, productive capacity, comfort and enjoyment.¹⁰ Trade was born.

Adam Smith depicts the life of feudal barons in Europe during the centuries before development of roads, market towns, foreign trade and a money economy provided an outlet for their surplus produce. It was not uncommon for a lord to support a thousand or more families of mostly idle retainers on the produce of serf labor, simply because he could find no better way to utilize the surplus. When trade opportunities opened up, many of these barons reduced their retinues from hundreds or thousands to a few dozen servants, so they could trade the surplus for manufactured and luxury goods.

Trade shifted the center of wealth creation from the field to the marketplace, where the value of produce depended solely on its exchange value to other people, not on the cost of producing it, and on the ability of prospective buyers to offer something of comparable value in exchange. The wider the market, the greater the likelihood that buyers and sellers would find a match. The more distant the market, the greater the likelihood that what was produced locally would be considered scarce and desirable. The development of ever growing networks of markets spurred a succession of commercial revolutions, such as the great Bourgeois Revolution wrought by Arab merchants travelling the caravan and sea routes from Mesopotamia to Egypt and across the over half the Mediterranean to Spain from the 8th to 12th centuries, while Europe still remained a feudal agrarian society.^{11, 12}

7. The Rise of Trust

Land and sea trade routes combined with standardized coinage were the principal cata-

lysts for the growth of markets. Without some form of money, exchange depended on the double coincidence of barter trade – finding buyers and sellers who both offered something the other was willing to buy in exchange. With the introduction of money, the probability of concluding a transaction rose exponentially, since it was sufficient that the buyer wanted what the seller had to offer and possessed money to be given in exchange. Money worked exactly like a chemical catalyst, moving from buyer to seller until the seller found something to purchase with it, moving on from one transaction to another unchanged by the process. The value of the money to the seller arose solely from the fact that it could later be redeemed for other desirable goods and services. The money itself was only a mechanism for recording the transfer of purchasing power, a symbol for the goods sold by the seller which empowered him to acquire other goods later on in exchange. The real value of that money was only as great as the availability of goods for which it could be redeemed. In other words, *the value of money was always founded on the productive capacity of the underlying economy, never on its own intrinsic value.* This remains true to the present day. That is why countries devastated by social unrest, political instability or civil war often find the value of their currency dramatically reduced.

“The value of money was always founded on the productive capacity of the underlying economy, never on its own intrinsic value.”

Commercial revolution eventually spread from the Levant to Southern Europe during the 13th century, where it took root in Italy and along the Adriatic, then gradually spread across Western Europe, laying the economic foundations for the Italian Renaissance and the mercantile empires of Venice and Dubrovnik, forerunners of the great colonial empires of the following centuries. The rigidity of a coin-based money supply was one of the major constraints to medieval business, which was overcome by a variety of creative innovations. While the Greco-Roman economy had been driven by minted coins, unstinting credit became the great lubricant of commerce in Italy.¹³ The rise of Italian merchant bankers marked a significant new phase in the evolution of money from coinage to bills of exchange and other forms of money based on credit and trust. Italian merchants exporting goods by sea to distant markets in Western Europe introduced bills of exchange as a form of promissory note in which the buyer agreed to pay for the goods at some future point in time. Often these notes were backed by the guarantee of another person or local institution of notable wealth in the buyer's country. Although the guarantor usually did not participate in the transaction, he was able to leverage his reputation as a catalyst to facilitate trade. Eventually, the use of bills of exchange spread throughout Europe.

This practice marked a transition from commodity money based on the value of the metal of which it was composed to credit money based on trust between individuals and institutions. Each time a transaction was successfully carried out between a buyer and seller, the trust between them increased and their willingness to transact business grew. Successful transactions progressively shifted the basis of trust from the underlying commodity or the transaction to the buyers and sellers engaged in those transactions. With increasing frequency, buyers and sellers extended credit to one another to increase the volume of their

trade. Reputable traders and trading houses found that they could carry out transactions based on the confidence and trust which other buyers and sellers placed in them. This gave rise to the emergence of the original merchant-bankers, which facilitated trade by transferring charges and credits in the accounts of their clients. The annual cycle of Champagne Fairs of France during the 12th and 13th centuries relied almost exclusively on credit instruments known as fair letters. These fairs became the financial clearinghouses for long-distance trade between north and south.^{14, 15} No longer was the creation of money dependent on an underlying commodity. Credit money could be created in the marketplace based on trust in those involved in trade, that is, in their capacity to complete transactions.

We still tend to think of economics solely or primarily as a matter of production. Production in the absence of markets may have use value, but it has no economic value. Market is a creative social institution which is creative of money. Market is a social organization designed to promote mutually beneficial relationships between people. *The growth of wealth is a measure of humanity's capacity to integrate myriad points of production and consumption within an ever widening, increasingly interconnected and complex network of trust.* Each step in expansion of the network, multiplication of its interlinkages and increase in the trust underlying the relationships is directly productive of greater wealth and greater social power.

The growth of credit money has passed through many stages since then. Today credit money generated by banks to commercial and individual customers and by companies to their corporate and individual customers represents one of the major sources of money. Keynes considered money on account, money that comes into existence along with debt contracts for deferred payment, as the primary form of money.¹⁶ Indeed some monetary scholars argue that all money, even commodity based money, is based on the creation of credits and debts, which constitute the two sides of every credit transaction.¹⁷

In earlier centuries, only a relatively few individuals, mostly from the aristocratic class, had access to what we now refer to as consumer credit. Since then the power of money creation has moved from banks, merchants, governments and a few wealthy individuals to the common man. Today the power of money creation is once again getting personal, but this time on a global scale. Consumer credit now represents a major source of money creation. In the USA alone it represents upwards of \$2.7 trillion.¹⁸ This is roughly equivalent to the total value of US currency notes in circulation.

The rapid expansion of the global credit card industry represents an unprecedented stage in which the power of creating credit money has shifted to individual consumers in the form of outstanding charges on their credit cards. Banks set credit limits, but it is the individual who decides how much to use, when to use it and when to pay it back. In most cases, the underlying asset securing this money is simply trust in the credit-worthiness of the borrower based on past credit history. Visa, the world's largest retail electronic payments system, links nearly 15,000 retail banks in more than 200 countries around the world with millions of merchants and about two billion card holders in a seamlessly integrated system involving 80 billion transactions valued at more than \$6 trillion annually.* The development of a

* See http://corporate.visa.com/_media/visa-corporate-overview.pdf

highly sophisticated global system for distributing the power of money creation to millions of individuals marks a new stage in the evolution of money. Individual trust has been institutionalized as a social system.

8. Money as Social Power

Monetarists regard money as a measurable quantity of financial instruments – currency notes, deposits, debt obligations, etc. – that can be tabulated by various measures of the total money supply, M0, M1, M2, etc. In contrast, this article focuses on money as a force that accomplishes work in society. That force is best measured by the results it generates, not merely by the quantity in circulation in various forms.

The value of a chemical catalyst cannot be adequately measured by its physical weight. Its value derives from its power to drive chemical reactions. Given the right temperature and pressure, a catalyst makes possible reactions that might otherwise take years to occur or never occur at all. The power of the catalyst is inseparable from the context in which it functions.

"The power of money is too great and important to be left to technical specialists, any more than we would leave the choice of our marriage partners to geneticists breeding for certain desirable traits."

The same applies to the physics of money. The primary aim of money is wealth creation. The power of money to create or multiply wealth depends on many factors. Most notable is the speed or velocity with which it is utilized, the number of transactions it catalyzes during a period of time. The higher the velocity with which transactions are completed, the higher the productivity and effective power of money. Therefore, examining various measurements of the money supply is insufficient to comprehend the extent to which the power of money has multiplied in recent centuries.

Another important determinate is the purpose for which money is applied. Money invested in production of beneficial goods and services possesses power to promote human welfare. Money applied for speculation in commodities, land, and financial instruments may multiply rapidly, but serve no useful social purpose. On the contrary, it may, as recently demonstrated, undermine the normal functioning of the real economy. In recent years, major corporations on every continent have been flush with funds. Often that money is being redirected for speculative purposes, even in countries where there is a serious shortage of capital for infrastructure development or other productive investments. The same applies to the utilization of money on activities that destroy or deplete the environment or threaten the security of other people by war or terrorism. A mere quantitative increase in the volume of money in circulation tells us very little about its overall contribution to human welfare or its untapped potential for catalyzing social development. Managing a society by the numbers is nothing less than speculation. *The power of money is too great and important to be left to technical specialists, any more than we would leave the choice of our marriage partners to geneticists breeding for certain desirable traits.*

Before the advent of the Industrial Revolution more than 50% of economically productive activity in the Western world was self-production for self-consumption or barter, i.e. it did not involve monetary exchange. Since 1800 monetarization has spread rapidly to encompass a much larger portion of the world economy. From then to now, total world GDP has increased about 100 fold in real terms. During the same period, real income has grown about 15 fold in per capita terms, in spite of a seven fold increase in world population.¹⁹ Scholars most commonly attribute this incredible achievement to the development and application of technology since the dawn of the Industrial Revolution. But this is an oversimplification. The development of new industrial technologies was accompanied by a corresponding and equally radical development of new social technologies, including new types of markets, new types of institutions and new ways to create money. It was also a period in which human rights and democratic freedoms have been widely distributed and education has spread rapidly. Without these corresponding changes in social organization, the results of technological innovation would have been far lesser. Indeed, the first rudimentary steam engine can be traced back to the 1st century AD Alexandria, some 1600 years before James Watts' invention in 1775. So it is evident that technology alone does not generate development. The extended use of money as a social organization played an important part in the democratization of political, economic and social rights.

9. The Psychological Evolution of Money

We have so far traced the psychological evolution of money from commodities to transactions to the people and firms undertaking those transactions and eventually to banking institutions specialized in the financing of trade, public expenditure, war and other activities. Psychologically this marked a movement from informal types of money or credit employed locally to impersonal, institutionalized forms of money operating over an extended geographical area. The physical chronology of different forms of money differs widely from place to place, but the progressive evolution from informal to institutional money is universally valid.

Until the 20th century, the most common form of paper currency used in Europe was the 'banknote', a promissory note issued by a state or commercial bank. The first European bank notes were introduced in Sweden during the 17th century. In England, the trust once placed in the goldsmith bankers of London who held gold bullion on deposit was gradually extended to a wider range of banking institutions holding public deposits of precious metals and other assets as backing for the notes they issued. The demand for more and cheaper money culminated in establishment of the Bank of England in 1694 and the Bank of Scotland the following year, which began issuing banknotes backed by their governments, which soon replaced the goldsmiths' receipts as the principal paper in circulation. By the time Adam Smith published his famous book *The Wealth of Nations* in 1776, bank money exceeded metallic money, a milestone in world monetary history.²⁰

For much of the 19th century, banknotes were the principal source of currency circulated in the USA. In 1789 the US Congress chartered the First Bank of the United States to issue banknotes. After the bank closed in 1811, the Second Bank of the United States was

chartered until 1836. After the Civil War, national banknotes issued by federally chartered commercial banks and backed by deposits in the US Treasury came into vogue. At one time nearly 10,000 different kinds of banknotes in addition to more than 5000 counterfeit varieties were in circulation in the US, some accepted only locally and others over a much wider area depending on the reputation and perceived trustworthiness of each institution.²¹ Privately issued banknotes remained in circulation until 1936, when they were replaced by Federal Reserve Bank Notes, which in turn were later replaced by Federal Reserve Notes backed by the assets of the Federal Reserve Banks.

10. The Supremacy of the State

The generation of money as a medium of exchange in trade is only one origin of money. By a parallel route money also has been created by government fiat as a means to pay for services rendered to maintain the security and welfare of the state. Adam Smith explained the rationale for this form of money creation, "A prince, who should enact that a certain proportion of his taxes should be paid in a paper money of a certain kind, might thereby give a certain value to this paper money; even though the term of its final discharge and redemption should depend altogether on the will of the prince."²²

The theory of Chartalism holds that tax debt has always been the principal basis for the creation of money, even in ancient times. Even when coins were the dominant form of money in ancient Greece, power of coinage was rigorously controlled by the state. According to Keynes, the issuance of fiat money in the form of government-issued tokens such as engraved clay tablets, copper or carved wooden sticks, is at least four thousand years old.²³ The state used these tokens to pay for goods and services and accepted them as legal tender for the payment of taxes.

Today we tend to look with suspicion at the idea that governments can create fiat money out of thin air without the backing of gold or silver, simply by declaring money as a legal tender for payment of taxes. The very idea that government can print money at will often evokes horrific visions of profligacy and impending financial crisis. The current Euro crisis is cited as evidence that the capacity of governments to spend must be strictly curtailed. The truth is quite different. One of the main reasons for the Euro-crisis is that the countries of the Eurozone have renounced their right to print money at the national level without creating an all-European institution with the power to take over the responsibility for ensuring the availability of sufficient money for a full employment economy.

Viewed historically, public debt is a remarkable evolutionary innovation. When the Roman Empire went bankrupt it did so without owing money to anyone, because the very concept of public debt had not yet been conceived. Given the vast resources of the Empire, the precipitous plunge into the Dark Ages may have been prevented, had it known what we know today. The invention of public debt was to play a central role in the development of the nation-state.

China introduced the first paper currency during the 10th century. Its value was linked to the value of precious metals but was not convertible. The English monarchy introduced

a unique form of money in the 12th century known as the tally stick, which was akin to a wooden bill of exchange. Tallies were notched sticks representing specific amounts of taxes payable to the King. The monarchy issued tallies to pay for its expenditures in advance of tax receipts and then accepted them back as payment of taxes in lieu of gold. For 700 years tallies were employed as a convenient method of payment by merchants for private transactions, thus becoming an earlier form of government-issued money. As the value of tallies grew to exceed the amount of taxes due to the throne during the present year, they came to constitute a form of public debt advanced by the people to the government to be repaid from future tax revenues. Over time the value of tallies in circulation continued to grow based on public confidence in the strength of the monarchy and the prosperity of the country. Thus, money was created based on trust in the government and the economy over which it presided.^{24, 25}

The psychological history of money reveals the evolution of a remarkable social invention. What began as a proxy representing things of material utility for human survival gradually evolved into a symbol representing trust in the ability and integrity of a person or organization to complete commercial transactions. From there the symbol generalized itself to reflect the trustworthiness and reliability of the institution issuing the money, be it a company, commodity exchange, merchant banker, commercial bank, central bank or government. The capacity of the state to create money required for governance, defense and public welfare is one of the essential conditions for the emergence of modern nation states.

At each stage of its development, the foundations of money became less material and dependent on specific persons, things or events, more subtle and dependent on the capacity of an institution or an economic system to fulfill an ever-widening array of human wants. As is always the case, the more subtle the forms it developed, the more powerful money has become.

The psychological basis of money was dramatically illustrated during the US banking panic of 1932. Banking panics had been a periodic occurrence throughout American history, with major occurrences in 1818, 1837, 1857, 1873, 1893, 1907, 1930, and 1931. When rumors spread that a bank was about to fail, depositors rushed to the bank to withdraw their deposits. Not even the financially soundest bank could withstand a panic, since most of its assets were lent to borrowers and could not suddenly be withdrawn to pay depositors.

The greatest panic of them all occurred in successive waves from 1930 to March 1933, resulting in the failure of 2444 commercial banks, compared with just 73 during the previous panic of 1907.²⁶ On assuming office as President that month, Franklin Roosevelt went on the radio to deliver the first of what would become known as his fireside chats. FDR appealed to the American people to halt the panic by reminding them that America still possessed the rich natural resources, industrious people and huge industrial capacity that had generated so much prosperity. He promised to immediately introduce legislation to guarantee the security of bank deposits and regulate the banking industry. When the banks reopened the following week, long lines of people formed to redeposit their hard earned money and the panic ended.

What began as a loss of faith in individual institutions of the financial system was reversed by a restoration of trust generated by faith in the national government, which represented

the wealth, people and productive capacities of the nation as a whole. Faith in America became the foundation for the American monetary and financial system. Since 1957 every US currency note proclaims that faith by the motto "In God We Trust".

11. The Ultimate Search Engine

Originally valued for the things that could be obtained with it, money has gradually come to be valued as a thing in itself, valuable not only because of what it can buy, but also because the mere possession of it signifies an accumulation of social power and capacity that can be applied for both economic and non-economic purposes.

For the individual who acquired or possessed it, money became a means to obtain political patronage, social influence, military power, religious indulgences, recreation and entertainment, and virtually every other form of social benefit. It became a measure of a person's marriageability and romantic desirability. Those who obtained it in large quantity came to be regarded as superior in intelligence, ability, and courage. They were accorded respect and deferential treatment, itself a form of power that opened up opportunities unavailable to the rest of humanity. Money became a symbol embodying all that human beings value and aspire for on earth and in society.

For the society that evolved the appropriate organization to generate and utilize it, money became a catalyst for awakening people's aspirations for the finer things of life, for releasing their energy and initiative for risky enterprise and ceaseless labor, for raising production and productivity to ever higher levels, for spurring continuous innovation and new invention. Once that energy was released, money also became the organizational means for channeling that energy effectively for productive purposes.

The remarkable role of money as a networking instrument to match needs and capacities has not been adequately recognized. Without the advent of accurate indexed search engines such as Google run by complex algorithms, trying to find information among more than 14 billion pages of the World Wide Web today would be quite like searching for a needle among millions of proverbial haystacks. Money plays a comparable role in matching buyers and sellers in the world of commerce as well as matching economic with non-economic needs and capacities in global society. Money is the ultimate search engine. For while Google is still confined largely to searching the cyberspace of virtual information and transactions, money extends its domain of power to all planes of human existence – material, social, mental, psychological and even spiritual. Money not only facilitates the free exchange of economic goods and services. It plays a similar role in the interconversion of all varieties of socially desirable 'goods', such as education, health care, culture, popularity, social status and political power. Rightly applied, money has the power to promote peace and security, save lives, educate youth, improve health, and foster understanding and the development of culture.

Money is not only a powerful catalyst. It is also a great transformer. Like the secret formula for converting lead into gold sought after by the alchemists, money facilitates the

conversion of any type and form of social power into any other type – conversion of scientific knowledge into power for greater production, conversion of political power into health and education.

Money is a great transformer. Like a dam across a raging river, it helps channel and direct the raw energy and productive potential of society so that it can be harnessed for useful work. Like the turbines of a hydroelectric project that transform the kinetic energy of the river into power that can be distributed to power a city, money transforms every variety of power for application in all fields of social activity.

“The psychological evolution of money is moving from things, institutions and governments to its ultimate source – the individual human being.”

12. Money as Human Capital

Money has evolved from a material thing to a symbol that represents material things, a symbol representing trust in commercial transactions and in the people and institutions that participate in them. From there it has evolved further to represent trust in the national government that issues currency and regulates the economy, which is founded on trust and confidence in the nation itself. There is no reason to conclude that the process will stop at this point. Given the inherent instability and inequality resulting from the current dollar-dominated global system, it seems inevitable that further efforts will be made to expand the concept of monetary union geographically from national governments and nation states to regional groupings, and ultimately beyond. A global currency was advocated by Keynes and the British government as an alternative to the Bretton Woods system in 1944. FDR directed his secretary of the treasury, Henry Morgenthau Jr., to also develop plans for a world currency, though the US subsequently withdrew support for domestic political reasons.²⁷

In another direction, the psychological evolution of money is moving from things, institutions and governments to its ultimate source – the individual human being. The human being is the source of all resources. For all things become a resource only when they are recognized as such by the human mind. Converting sand into bricks, glass or silicon chips or decayed organic matter into fuel, synthetic fabrics and pharmaceuticals are strictly human activities. In that sense Human Capital has always been and will always be the real source of wealth creation, human welfare and well-being.

The power of any society to create money ultimately resides in the psychological values and capacities of its people. The willingness of individuals to honor obligations and commitments is the basis for the creation of credit money. The willingness of society to extend and disseminate the power of money to all citizens is the true basis of democratic economy. This trend is illustrated by the unprecedented extension of consumer credit to cover the vast majority of people in USA. About three quarters of Americas now have access to credit card money, including about 45% of low income families.^{28, 29} This has been made possible not only by the development of a very sophisticated credit delivery and monitoring system, but also by the willingness of individuals to accept, utilize and repay the credit. Banks may

allocate the right to create credit card money, but it is only the individual card holder who can decide to exercise that right and actually create it.

The individual becomes the ultimate issuer of money based on the trust society places in him, which is founded on his own trustworthiness and trust in himself. In spite of four years of economic slowdown, in 2011-12, only 2-4% of US credit card holders were more than 60 days late in making payments. This reflects the psychological capacity of the people to create money and the willingness of the society to extend it to all who exhibit that capacity. Extending that capacity further to reach the entire American population and eventually to all humanity is a line of evolution that will mark a fuller recognition of the value of the individual human being and the essential role of the individual in the development of global society.

We conclude, as we began, with the observation that the world already possesses the capacity to promote the welfare of all human beings. To do so will require many changes in law, public policy and institutional functioning. It will also require a fundamental reconsideration of the nature and role of money in human development and a willingness to reorient values, attitudes and policies to unleash the full potential of this remarkable human invention for the welfare and well-being of all.

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An Aging Workforce: Employment Opportunities and Obstacles

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Abstract

The last decade has witnessed significant changes in the structure of unemployment in the global labour market. This is corroborated by the fact that the global workforce is rapidly aging and the share of people aged 50 and over in the structure of the labour market is increasing. In line with this trend, unemployment issues should be considered as a global problem that cannot be fully resolved at the level of any individual country separately.

The main objective of this paper is to throw some light on the aging workforce and the elderly population's opportunity to realise their right to work and be treated equally with younger age groups. Hence, the paper simultaneously focuses on the age and gender discrimination of elderly population in terms of their employment prospects. The aim of our research is not only to point out certain stereotypes concerning the elderly labour force, but also to stress that unless preconditions for overcoming these stereotypes are created and employment opportunities are given to this segment of the labour force, full employment as an ultimate goal of global economic policy cannot be achieved. It is in accordance with these considerations that we offer a model to achieve this goal.

"As freedom has finally been recognized as an inalienable right of every human being, we are fast approaching the time when society must recognize and ensure the right of every individual to gainful employment"

1. Introduction

The International Labour Organization (ILO) has warned that the global employment situation is "alarming" and unlikely to improve soon. This can be linked with the fact that the recent global economic crisis has had a big impact on unemployment. This statement can be supported by the fact that the unemployment rate across the eurozone reached 11.7% and 10.7% in EU27 in December 2012.² According to the same source, the lowest unemployment rates were recorded in Austria (4.3%), Germany and Luxembourg (both 5.3%) and the Netherlands (5.8%), and the highest in Greece (26.8% in October 2012) and Spain (26.1%).

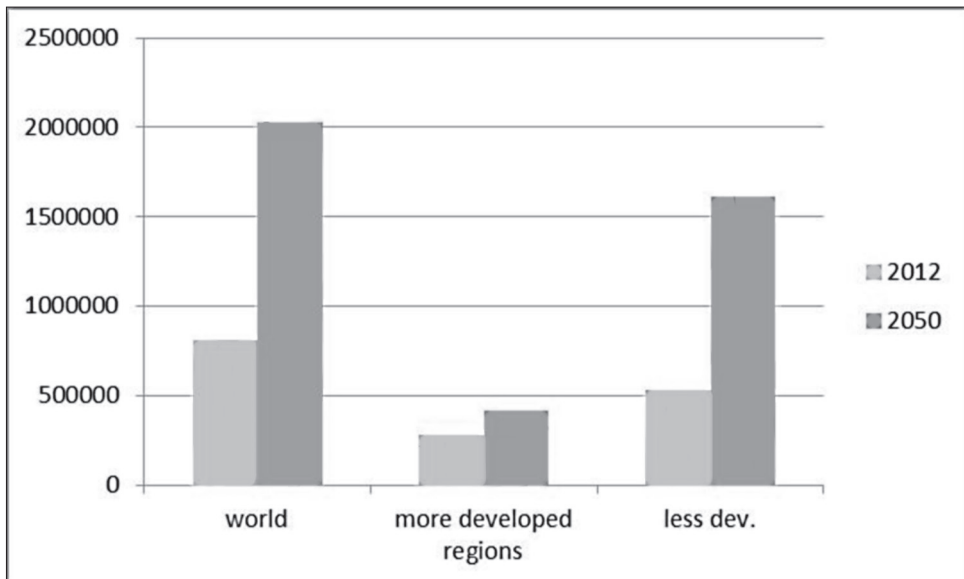
This trend is expected to continue in 2014. Some estimations show that the unemployment rate at the eurozone level will continue to rise from 11.7 percent, according to latest figures, to 12.5 percent by early 2014.³ The International Labour Organization estimates that global unemployment will rise by 5.1 million this year to more than 202 million, and by another 3 million in 2014, following a rise of 4.2 million in 2012.⁴

Between December 2011 and December 2012, the unemployment rate for males increased from 10.5% to 11.6% in the euro area and from 10.0% to 10.7% in the EU27. The female unemployment rate rose from 10.9% to 11.8% in the euro area and from 10.1% to 10.7% in the EU27.

Demographic trends tell us that, by 2050, two billion people will be aged 60 or over and 80 percent of them will be living in developing countries. With the problem of population aging, the labor force aged 60-64 will increase by 55 million between now and 2020.⁵

Recent forecasts show that the number of elderly people in the world, those over 60, will increase by 39% in the period from 2012 to 2050. This number will be higher in less developed countries than in more developed ones (66% and 33%, respectively) (See Fig.1).

Figure 1: The Labour Force aged 60 and over in thousands (2012-2050)⁶



In 2010, there were approximately 63 million more women aged 60 or older than there were men of the same age.⁷ These trends make an impact on the structure of the labour market. In line with this, the labour market has changed markedly in recent decades. Eurostat predicts a possible decrease of about 20.8 million (6.8%) people of working age by 2030.⁸ Currently, only around 50% of people in the EU are still in employment at the age of 60. Around 40%

of women and 10% of men aged 55-59 work part-time in Europe, a slightly higher number than among those aged 50-54.⁹ In addition, workers who lose their jobs in their fifties and sixties find it increasingly difficult to reactivate themselves again and continue their careers.

Active aging in employment has been a long-standing issue within the European employment strategies, and is a central issue within the recent Europe 2020 strategy. Older people are a valuable and productive economic resource. Increasing employment opportunities among older workers is essential to ensure that the labour market and workforce adapt to meet the needs of an aging population. The need to increase the employment rate of older workers has been translated into quantitative objectives intended to keep those aged 55-64 in work and to raise their average age of exit from the labour market.¹⁰

“There is an urgent need for formulation of an integrated theory of employment to explain the process by which jobs are created and to explain the contributing role of political, social, technological and economic factors in that process.”

While labour market research is not a new phenomenon, the interest in it is growing as more and more scholars come to understand the significance of and choose interdisciplinary research as a powerful tool for understanding, critique, explanation and change. Based on some research studies, we attempt to add new and important aspects (gender, knowledge, education, entrepreneurship, self-employment and informality, employment and globalization) that the analysis of employment and research puts forward. We argue that there is an urgent need for the formulation of an integrated theory of employment to explain the process by which jobs are created and to explain the contributing role of political, social, technological and economic factors in that process.

2. Theoretical Overview

The varieties of approaches towards employment analysis differ in theory, methodology, as well as in the type of research issues. The peer literature review helps us identify gaps in the form of relevant questions that appear not to have been tackled, and makes it clear where further enquiry should lie.¹¹

In the literature, the main focus has been on the identification of the factors that make a person employable as well as on the concept of employability.¹² Research shows that the degree to which workers consider their work as meaningful plays an important role as a factor that promotes the individual employability of older employees. Older workers and their respective conditions in labour markets represent a diverse panorama of realities across the globe.

The level of employment amongst people aged 50 and over is important, not only in terms of achieving full employment, but also to provide for people's retirement needs.¹³ With an

increasingly aging workforce it is important to address their work prospects as well as the obstacles they face in achieving employment security. People aged 50 and over face a range of specific barriers related to their age. One of the biggest hurdles is age discrimination, based on stereotypes and myths about the limitations of older workers.¹⁴ The age discrimination in employment refers to the use of “crude proxies” in personnel decisions, relating to hiring, promotion, retraining, firing and mandatory retirement. The negative consequences of age discrimination in employment can include barriers to recruitment and hiring, diminished conditions of work and employment, limited career development and, in the absence of legislation, diminished employment protection and rights.¹⁵ Recent literature cites that age discrimination occurs when preferential decisions are based on age, rather than on an individual’s merits, credentials or job performance.^{16, 17} Riger and Galligan pointed out noticeable socio-psychological and physiological differences within age discrimination.¹⁸ Age discrimination is a moral issue as well as a personal one for everyone who expects more birthdays – but it’s also a serious issue for businesses.¹⁹ Research suggests that employers’ attitudes towards older workers are frequently related to misconceptions concerning older workers’ abilities.²⁰ A frequent accusation against older applicants is that they are less mentally flexible and less physically active than their youthful competitors.²¹ Employers judge older workers to be in poor health, resistant to change, uncreative, prone to accidents, disinterested in technological change, and hard to train.²² Further, employers’ attitudes towards elderly workers vary significantly according to company size, employers’ age and gender, with older female employers from smaller companies displaying the most positive attitudes.²³ According to a research study, women face age discrimination earlier in life than men do, and the combination of age and gender discrimination is particularly difficult for women to overcome.²⁴ Until recently, research on the redundancy and job search experiences of older workers focused primarily on the early retirement and exit of male workers and tended to neglect the experiences of older women.²⁵ Research also suggests that older women are frequently perceived as both less attractive and less competent than younger women.^{26, 27} The importance of appearance in seeking or maintaining employment, particularly for females, has been noted in the literature: “When women attain the symbolic meaning of ‘physically unattractive’ (to men) they may be pushed out of visible areas or forced into retirement regardless of their skills”.²⁸ Women who have chosen clerical, secretarial or reception work may be especially liable to discrimination during the later part of their working lives as they work within female-dominated occupations where ageism and sexism frequently combine to create the ‘double jeopardy’ of ‘gendered ageism’.²⁹ In countries where unemployment is low, with fewer applicants searching for a job, employers have fewer opportunities to discard applicants simply on the basis of some arbitrary characteristics such as gender and age.³⁰

There is a lot of literature on women’s employment which has been applied to comparative research. This ranges from concepts of patriarchy to debates in Human Capital and segmented labour market theory. Rubery has argued that applying a societal perspective to women’s employment means that we need to understand the way in which the system of industrial labour market and family organization interrelate and also the role of the society’s political and social values in maintaining these relationships before we could expect to

make sense of the differences between countries in the position of women.³¹ Hers and similar studies for the most part are blind to taking into account many important factors in their research. This issue has to be paid special attention to, having in mind that the problem of discrimination both in the employment of the female labour force and in their promotion at work is still far from being solved.

As many scholars have pointed out, male-oriented ideologies often prevent adequate recognition of female contributions and, in some instances, do limit their participation.^{32, 33,}³⁴ In some countries, women are subjected to negative stereotypes that in turn lead to their being deprived of resources thus forcing them into the informal sector.³⁵ The World Conference on Ageing held in Madrid in 2002 endorsed a life course approach to well-being in old age which is especially important for women “as they face obstacles throughout life with a cumulative effect on their social, economic, physical and psychological well-being in their later years”.³⁶ Those older women who grew up when the male breadwinner and female carer model of gender relationships were predominant may be particularly vulnerable to the effects of gendered ageism within the workplace. Such women were often forced to leave school with limited qualifications, entering traditional female occupations and either withdrawing from the labour force or working part-time whilst their children were young.³⁷

However, the finding from more than 100 research investigations is that there is no significant difference between the job performance of men and women, nor older and younger workers. In this context, some labour market economists are already beginning to re-examine their assumptions that the preference for younger workers is economically rational.³⁸

Despite a lot of literature in the area of age discrimination, limited research has been conducted in the area of age discrimination in employment against older adults, those between the ages of 55 and 64. In addition, there has been little, if any, consideration of the quality of jobs and working conditions in policy discussions and the debate surrounding the issue of extending working life.³⁹

Our own work in this area differs to some extent in these respects from some new research in the field of employment that has a partial theoretical approach to the topic. The holistic and integrated approach has a strongly grounded rationale for supporting employment theory and practice.⁴⁰

3. The Definition of Full Employment and the Possibility of Achieving it

The pooling of all social, political and economic forces and resources aimed at full employment must be the guiding principle of the new working society.⁴¹ Full employment implies a labour market where the number of job seekers and that of job openings match up very tightly, but it does not mean there is zero unemployment.⁴²

Many economists have attempted to estimate the amount of frictional unemployment. In line with this, we can find in literature that the number ranges from 2-7% of the labour force or over 80 per cent of the working age population in employment. Societies must be able to provide jobs for all those willing to work.

There are four elements that comprise a modern definition of full employment:⁴³

- Everyone who wants to work can find a job quickly
- No groups are excluded or disadvantaged in the labour market, i.e., it is necessary for all segments of the labour market to have the ability to have the access to work and to stay at work.
- There are opportunities for promotion at work
- Poverty at work is eradicated and there is employment for all.

Full employment is achieved, in principle, when all available resources (labour, capital, land, and entrepreneurship) are employed to produce goods and services. Achieving full employment, while promoting equality and social stability, has great significance for individuals, families, and the economy as a whole.⁴⁴

When we are considering the issue of achieving full employment and social welfare, it is necessary to revise current employment theory and propose a new employment strategy. They should follow the current conditions and challenges in the labour market. That is of key importance because solutions to current crises must be found in a manner different from the one in which they were sought in the last few decades when the demographic, economic, political and other circumstances were quite different.

“The biggest obstacle to creating a full-employment economy is politics...the problem is not the lack of solutions, but the lack of political will.”

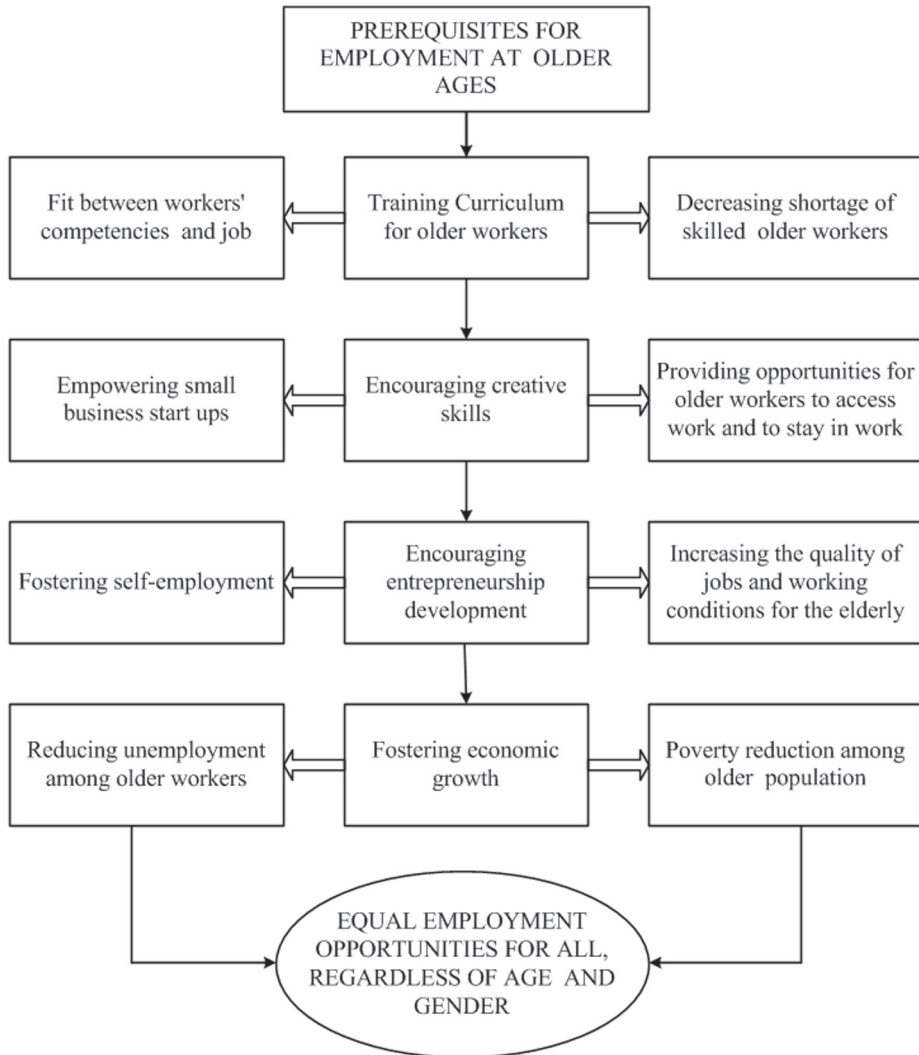
It is also necessary to stress the greater importance of full employment with respect to the human dimension, which mostly involves the right to work under equal working conditions. Therefore, the guarantee of fundamental principles and rights at work is of particular significance in that it enables the persons concerned to claim freely and, on the basis of equality of opportunity, their fair share of the wealth which they have helped to generate, and to achieve their human potential fully.⁴⁵ Nevertheless, these rights are still not duly observed or they do not even exist and are exercised in different ways in various parts of the world. They are most obvious in the gender and age aspects. They are present in the barriers to recruiting and employing personnel, in poor working conditions, in limited opportunities for career development and in the lack of legal regulations. Age discrimination is present when the applicant's age is taken into consideration in decision making, instead of his/her merits, experience and quality of their performance. This form of discrimination includes negative attitudes, feelings and stereotypes about elderly people. Ageism is the third commonest type of discrimination, after racism and gender discrimination. Hence, much more attention in research is paid to the issues of gender discrimination than to age discrimination. Attaining gender equality is considered to be one of the priority goals in many a country worldwide and in the European Union member states too. Equality of women and men is a common value and one of the fundamental values of the EU Member States, which stipulate the promotion of gender equality as a permanent objective of the European Community in all its activities.⁴⁶ Hence, approaches to employment issues should be revised. This involves taking into

account the human perspective of employment and an absence of discrimination in relation to opportunities, an allocation of resources or benefits for women and men.⁴⁷ In line with this, Wray and Forstater justify the right to work as a fundamental prerequisite for social justice in any society in which income from work is an important determinant of access to resources. Similarly, the Gender Mainstreaming Strategy in Employment should be modified in such a way that it will effectively deal with the problems specific to gender equal opportunities at the global level.⁴⁸ Given, however, that there are significant cultural, social, economic and other differences and that this problem is not evident in equal measure throughout the world, it is necessary that a massive campaign be undertaken and various measures and activities be taken to reduce gender discrimination. Therefore, women must work together in a common struggle to reach the same power as men, to shape the society and their own lives by having the same opportunities, rights and responsibilities.

In the process of implementing policies of gender equality and empowerment of women, non-governmental organizations and networks play an important role and offer support. Thus, it is time to derive a new concept of full employment that relies less on the old rule — the relationship between unemployment and inflation — and more on the actual experience of the marketplace.⁴⁹ In addition, some scientists point out that it is very important that there is a political will for achieving full employment. In this context, the scientist Polin believes that the biggest obstacle to creating a full-employment economy is politics.⁵⁰ In his opinion and in many other scientists', the problem is not the lack of solutions, but the lack of political will. In this context, governments can save millions of jobs, as Germany has successfully done, by subsidizing employers to keep workers on the job for shorter hours, rather than laying them off.⁵¹

4. Preconditions to Employment of Persons Aged 55 and Over

Many stereotypes and prejudices related to the employment of elderly persons that employers usually exhibit to avoid employing them find no justification today and cannot be taken as valid arguments. Primarily, the demand for manual work has decreased, which suits older workers to a large extent. Similarly, due to the advances in medicine and better life conditions, the physical and mental health of elderly population have improved, which enable them to be able to work longer hours than it was possible in the past. Besides, the living style has completely changed in the last two decades. All this has led to a situation that even those who count as the richest and who can safely retire, wish to continue to work and feel useful to themselves, to their families and to their society. The poor ones are forced to work even after they have formally retired because their pensions are small and often insufficient to allow a decent life. There is also a category of people that was laid off due to the crisis, who cannot exercise their right to retirement and hence want to find a new job. The motives of elderly people to go out to work may differ; however, what is common to all of these people is that they want to be actively working as long as they are able to work. Some wish to try new jobs and start up their own firms. Here they encounter numerous barriers of different forms. Hence, we have devised a model of employment and elimination of discrimination against older workers, and set the preconditions to its implementation (Figure 2).

Figure 2: Prerequisites for Employment at older ages

This model also stresses the benefits of employing elderly people, at the individual as well as the social level. This model can also be viewed as a “communicating vessels” model, where each of the constituent parts implies and affects the other. They are all closely interconnected and act in synergy producing equal employment opportunities for everybody, regardless of age or gender.

5. Age Obstacles to Employment

Demographic changes bring about a dramatic effect upon the labour market. With the fast aging of European population and a longer life expectancy, extending working life has become a priority (Lisbon Declaration). It is for this reason that we focus on the analysis of the position of people aged 55 and over on the market as their share has increased significantly in the past decades, with a tendency to grow further in the decades to come. All indicators show that this category of people was severely hit by the socio-economic and financial crisis, which was reflected in the growth of unemployment and long term unemployment. Reasons are numerous. Some of them will be analysed later in this paper.

Primarily, the unemployed elderly population remains jobless twice as long as the overall population on average because their skills are often outdated and their salary needs are too high.⁵² In addition to the mentioned attitudes we find in literature, there are numerous stereotypes that pose a major barrier to employment of persons aged 55 and over. These stereotypes suggest that older workers: (a) are less motivated in learning new skills (b) are less physically active and mentally prepared to respond to the demands of their jobs (c) with low level of qualification are prevented from advancing in their career or getting a job. These stereotypes are dealt with individually.

5.1. They are less motivated in learning new skills

Gender diversity and age diversity are an asset for corporate image and help bring a company, its employees, shareholders and customers together, improve their brand image as well as customer satisfaction.⁵³ The generation over 50 is the generation of baby-boomers, those born between 1943 and 1960. They are a hard working generation that feel the need to be valued for their contribution. The factors that motivated in the past might have changed for many. The management has to devise suitable motivation programs for this generation. Hence, motivating gender and age diverse workforce is a challenge for the management. The issue needs to be handled efficiently so that they should feel safe, comfortable, confident and satisfied. In addition, they should be treated equal to the younger workers at work. Many of the stereotypes that prevent employers from hiring and making a good use of older workers are merely myths. One of the stereotypes is that older workers are not motivated enough to learn new skills and thrive at work. This, however, cannot be taken as a general rule for all older workers. It mostly depends on managers and their abilities to encourage workers. The benefit of understanding what motivates others is important. Motivation increases productivity, quality and service. It also helps people achieve goals, gain positive perspective, create the power to change, build self-esteem and capability and manage their own development. In line with this, motivation of older workers is better if they are managed well. There is also a growing consensus that these objectives cannot be achieved without a significant improvement in working conditions.⁵⁴

5.2. They are less physically active and mentally prepared to respond to the demands of their jobs

One stereotype is that older people are less physically active and less mentally prepared to answer the demands of their jobs than the younger age groups. It is our opinion that these

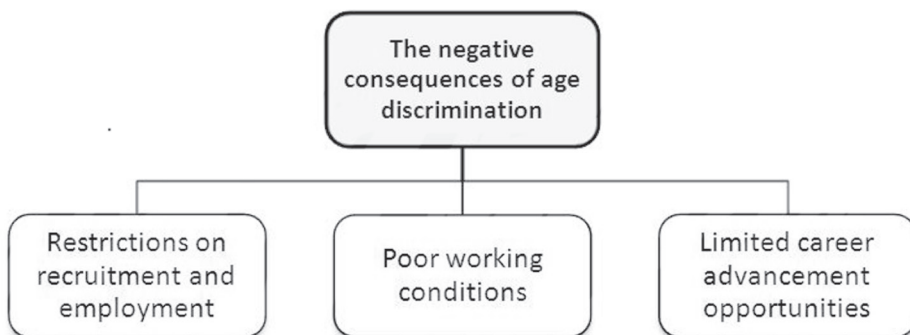
attitudes cannot be fully accepted given that the health (both mental and physical) of elderly people is much better nowadays than it used to be in the past. Hence, they represent a valid potential in terms of labour force, skills and experience that societies need to put to productive use. Experience with “active aging” shows that older people, when integrated into the society, lead a better quality life, live longer and stay healthier. A conclusion can be drawn that integration and participation in employment are closely connected with the concept of social cohesion, a vital constituent of a healthy society. This can be achieved through a more substantial support the society should provide for this category of population in terms of encouraging them to be economically active as long as they choose or are able to be. The lack of policy that will regulate these issues leaves elderly people to live their lives in poverty instead of recognizing their active economic and social contributions. It is in this view that we can rightfully conclude that aging is a natural process, and that healthy elderly people are an important resource for their families, their communities, as well as for the economies of their countries.

5.3. Low level of qualification prevents them from advancing in their career or getting a job

This age group predominantly includes individuals with low qualifications, which is one barrier to finding a new job or being promoted in the present job.

Regardless of the fact that this category includes mostly unskilled workers or workers with low qualifications, our research has shown that the workers are ready to develop in their career and learn, but need adequate support.⁵⁵ Most often, they do not receive such support. Employers are not willing to invest in the education of their employees which would in turn improve their competencies and enable them to earn more. They are not interested in investing in older people because of uncertain returns. Therefore, the lack of competencies and skills is one of the most commonly cited reasons as to why older people are generally unattractive to prospective employers.⁵⁶

Figure 3: The Negative Consequences of Age Discrimination in Employment



It is therefore necessary that training programmes should be devised for this target group. In many a country, however, little attention is paid to people aged 55 and over, hence there are no adequate training programmes to help them face business challenges and succeed in their jobs. It is important that this support comes from both the state and the educational institutions simultaneously.

6. Conclusion

Many developed nations and other advanced economies such as Japan have an aging population as a result of falling birth rates and higher life expectancy. The labour market is therefore increasingly composed of older workers. Aging is a natural process and healthy elderly people are an important resource for their families, for their communities as well as for the economies of their countries. Lack of policy, which will regulate these issues, forces elderly people to live in poverty instead of recognizing their active economic and social contribution. Hence, the goal of any society should be to give people an opportunity to work and be productive as long as they wish to do so. However, there are different reasons for and attitudes associated with unemployment after the age of fifty. Some people feel it is inevitable because of their age, but others keep trying to get a job.⁵⁷

"The goal of any society should be to give people an opportunity to work and be productive as long as they wish to do so."

Recent literature reveals that age discrimination is present when the age of applicants is taken into consideration in decision making, instead of making decisions on the basis of an individual's merits, experience and quality of their performance. Besides, there are stereotypes about older people being less active physically and also not really capable mentally of meeting the requirements of their jobs, in comparison with younger people. Many go as far as adding other handicaps of older people, such as lack of creativity, lack of interest in gaining new knowledge, etc. It is our opinion however that the attitude employers take towards older employees largely depends on the size of the company and the type of job, the gender and the age of employers themselves. Smaller firms have proved to be more willing to employ older workers. Given that older workers are the most flexible as regards accepting part-time jobs and that they are highly ethical and loyal to their employers, as recent research has shown, the attitude towards them is expected to change gradually which in turn will make these people more eligible for work.

Recent research also shows that mostly people who are aged 50 and over and are not in employment would, however, prefer to be in work, and are often living on incapacity-related benefits. Therefore, it is necessary to find new opportunities in the labour market for the economically inactive population aged 50 and over if the goal of full employment is to become a reality. The employment rate for these people is associated with improved economic prosperity and labour market structure and movements. Labour markets are in a continuous state of change as a result of long-term demographic trends shaping the composition of labour supply. Hence, it is necessary that new solutions be found to the problem of employment of

older workers. Primarily, there are certain preconditions that need to be satisfied in order for elderly persons to be employed, that is, the qualification level of this segment of population is to be raised, measures are to be undertaken to encourage self-employment, any forms of discrimination are to be abandoned and equal conditions for work and employment for all age groups are to be created. In line with this thought, this paper proposes a model that offers a basis for stimulating employment of persons over 55 years of age. This model can be understood as a “communicating vessels” model. All its constituent parts are closely interconnected and their synergy results in creating equal opportunities for employment for all, regardless of age or gender. Only when these conditions are created can a significant progress be made towards attaining full employment. It is for such reasons that a number of academics maintain that the role of state policy is of predominant importance in the present times of high global unemployment; they also consider the fast growth rate of the elderly population whose share has permanently increased in the labour market in the last few decades. Many are of the opinion that the experience of Germany can help to a significant extent, as the country managed to increase the number of employees and attain full employment by shortening the working hours of its employees and hiring workers on a part-time basis. A lower number of working hours did not result in lower wages, as the state subsidized the difference. Such forms of subsidies, however, cannot be expected in countries with a budgetary deficit, so they have no sources out of which the difference in earnings can be financed. One opportunity for these countries is to tax the rich and use those revenues to help older groups through job creation programs or wage subsidies. But while we do need a more progressive taxation to meet revenue needs, this is not a long-term solution. It is for these reasons that other solutions need to be sought. During times of elevated joblessness, like the present time, stimulus measures such as infrastructure investment and fiscal aid to states could help us get closer to full employment.⁵⁸

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The Arms Trade Treaty Opens New Possibilities at the UN

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Abstract

On 2 April, 2013, the Arms Trade Treaty, which had been blocked for ten years in the consensus-bound Conference on Disarmament in Geneva, was put directly before the United Nations General Assembly, and was passed by a massive majority. This historic victory opens new possibilities for progress on other seemingly intractable issues. In particular, it gives hope that a Nuclear Weapons Convention might be adopted by a direct vote on the floor of the General Assembly. The adoption of the NWC, even if achieved against the bitter opposition of the nuclear weapon states, would make it clear that the world's peoples consider the threat of an all-destroying thermonuclear war to be completely unacceptable.

Other precedents can be found in the International Criminal Court and the Ottawa Land Mine Treaty, both of which were adopted despite the vehement opposition of militarily powerful states. The Arms Trade Treaty, the ICC and the Land Mine Treaty all represent great steps forward. Although they may function imperfectly because of powerful opposition, they make the question of legality clear. In time, world public opinion will force aggressor states to follow international law.

On April 2, 2013, a historic victory was won at the United Nations, and the world achieved its first treaty limiting international trade in arms. Work towards the Arms Trade Treaty (ATT) began in the Conference on Disarmament in Geneva, which requires a consensus for the adoption of any measure. Over the years, the consensus requirement has meant that no real progress in arms control measures has been made in Geneva, since a consensus among 193 nations is impossible to achieve.

To get around the blockade, British U.N. Ambassador Mark Lyall Grant sent the draft treaty to Secretary-General Ban Ki-moon and asked him on behalf of Mexico, Australia and a number of others to put the ATT to a swift vote in the General Assembly, and on Tuesday, April 3, it was adopted by a massive majority.

Among the people who have worked hardest for the ATT is Anna Macdonald, Head of Arms Control at Oxfam. The reason why Oxfam works so hard on this issue is that trade in small arms is a major cause of poverty and famine in the developing countries. On April 9, Anna Macdonald wrote:

“Thanks to the democratic process, international law will for the first time regulate the \$70 billion global arms trade. Had the process been launched in the

consensus-bound Conference on Disarmament in Geneva currently in its 12th year of meeting without even being able to agree an agenda, chances are it would never have left the starting blocks. Striving for consensus is, of course, sensible. The problem is that it can lead to a lowest-common-denominator approach. The balance of power shifts to those, often the minority, who oppose an issue, because all the effort goes into trying to persuade them not to bring everything to a shuddering halt. Tuesday, April 2, was a good day for the U.N. It showed that things can get done. It showed that the democratic process can work. And it set an important precedent. Does it make any difference, legally, that the treaty was adopted by vote, not consensus? No. It is the same text as on the final day of negotiations, and its legal status is the same as if it had been agreed by consensus. But it should give hope to those working on other seemingly intractable issues that you can change the rules of the game and make progress."

I think that the point made by Anna Macdonald is an enormously important one. The success achieved by moving discussion of the Arms Trade Treaty from the Conference on Disarmament to the UN General Assembly points the way to progress on many other issues, especially the adoption of a Nuclear Weapons Convention. In my opinion, it is highly desirable to make a motion for the adoption of a Nuclear Weapons Convention on the floor of the General Assembly, following exactly the same procedure as was followed with the ATT. If this is done, the NWC (a draft of which is already prepared) would certainly be adopted by a large majority.

It might be objected that the nuclear weapon states would be offended by this procedure, but I believe that they deserve to be offended, since the threat or use of nuclear weapons is illegal according to the 1996 ruling of the International Court of Justice, and in fact the threat or use of force in international relations is a violation of the UN Charter. The adoption of the NWC would make clear the will of the great majority of the world's peoples, who consider the enormous threat which nuclear war poses to human civilization and the biosphere to be completely unacceptable.

It is not only the ATT that forms a precedent, but also the International Criminal Court, whose establishment was vehemently opposed by several militarily powerful states. Nevertheless, the ICC was adopted because a majority of the peoples of the world believed it to be a step forward towards a stable, peaceful and just global society.

In 1998, in Rome, representatives of 120 countries signed a statute establishing the International Criminal Court, with jurisdiction over the crime of genocide, crimes against humanity, war crimes, and the crime of aggression.

Four years were to pass before the necessary ratifications were gathered, but by Thursday, April 11, 2002, 66 nations had ratified the Rome agreement, 6 more than the 60 needed to make the court permanent. It would be impossible to overstate the importance of the International Criminal Court. At last, international law acting on individuals has become a reality! The only effective and just way that international laws can act is to make individuals respon-

sible and punishable, since (in the words of Alexander Hamilton), "To coerce states is one of the maddest projects ever devised."

Although the ICC is in place, it has the defect that since it is opposed by powerful states, it functions very imperfectly. Should the Nuclear Weapons Convention be adopted by the UN General Assembly despite the opposition of the nuclear weapon states, it would have the same defect. It would function imperfectly because despite the support of the vast majority of the world's peoples, a few powerful opponents would remain.

"In the case of a Nuclear Weapons Convention, world public opinion would especially have great force."

Another precedent can be found in the Antipersonnel Land-Mine Convention, also known as the Ottawa Treaty. In 1991, six NGOs organized the International Campaign to Ban Landmines, and in 1996, the Canadian government launched the Ottawa process to ban landmines by hosting a meeting among like-minded anti-landmine states. A year later, in 1997, the Mine Ban Treaty was adopted and opened for signatures. In the same year, Jody Williams and the International Campaign to ban Landmines were jointly awarded the Nobel Peace Prize. After the 40th ratification of the Mine Ban Treaty in 1998, the treaty became binding international law on the 1st of March, 1999.

The adoption of a Nuclear Trade Treaty is a great step forward; the adoption of the ICC, although its operation is imperfect, is also a great step forward, and likewise, the Antipersonnel Land-Mine Convention is a great step forward. In my opinion, the adoption of a Nuclear Weapons Convention, even in the face of powerful opposition, would also be a great step forward. When the will of the majority of the world's peoples is clearly expressed in an international treaty, even if the treaty functions imperfectly, the question of legality is clear. Everyone can see which states are violating international law. In time, world public opinion will force the criminal states to conform to the law.

"I feel that the question may justifiably be put to the leading nuclear powers: by what right do they decide the fate of humanity? From Scandinavia to Latin America, from Europe and Africa to the Far East, the destiny of every man and woman is affected by their actions."

– Javier Pérez de Cuéllar

In the case of a Nuclear Weapons Convention, world public opinion would especially have great force. It is generally agreed that a full-scale nuclear war would have disastrous effects, not only on belligerent nations but also on neutral countries. Mr. Javier Pérez de Cuéllar, former Secretary-General of the United Nations, emphasized this point in one of his speeches:

"I feel", he said, "that the question may justifiably be put to the leading nuclear powers: by what right do they decide the fate of humanity? From Scandinavia

to Latin America, from Europe and Africa to the Far East, the destiny of every man and woman is affected by their actions. No one can expect to escape from the catastrophic consequences of a nuclear war on the fragile structure of this planet. ...”

“No ideological confrontation can be allowed to jeopardize the future of humanity. Nothing less is at stake: today’s decisions affect not only the present; they also put at risk succeeding generations. Like supreme arbiters, with our disputes of the moment, we threaten to cut off the future and to extinguish the lives of innocent millions yet unborn. There can be no greater arrogance. At the same time, the lives of all those who lived before us may be rendered meaningless; for we have the power to dissolve in a conflict of hours or minutes the entire work of civilization, with all the brilliant cultural heritage of humankind.”

“...In a nuclear age, decisions affecting war and peace cannot be left to military strategists or even to governments. They are indeed the responsibility of every man and woman. And it is therefore the responsibility of all of us... to break the cycle of mistrust and insecurity and to respond to humanity’s yearning for peace.”

The eloquent words of Javier Pérez de Cuéllar express the situation in which we now find ourselves: Accidental nuclear war, nuclear terrorism, insanity of a person in a position of power, or unintended escalation of a conflict, could at any moment plunge our beautiful world into a catastrophic thermonuclear war which might destroy not only human civilization but also much of the biosphere.

We are reminded that such a disaster could occur at any moment by the threat of an attack by Israel on Iran and by the threat of an all-destroying nuclear war started by the conflict in the Korean Peninsula. It is clear that if the peoples of the world do not act quickly to abolish nuclear weapons, neither we nor our children nor our grandchildren have much chance of survival.

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BOOK-REVIEWS

by Michael Marien

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Global Trends 2030: Alternative Worlds

National Intelligence Council Washington: NIC, Dec 2012, 137p, \$9.99pb; \$1.99

Kindle (download free at www.dni.gov/nic/globaltrends). *

The fifth quadrennial installment of the NIC series “aimed at providing a framework for thinking about the future...by identifying critical trends and potential discontinuities,” described as “megatrends” (factors that will likely occur under any scenario) and “game-changers” (critical variables whose trajectories are far less certain). As appreciation of diversity and complexity grows, “we have increased attention to scenarios or alternative worlds we might face.” Alternatively stated, “*We are at a critical juncture in human history, which could lead to widely contrasting futures.*” The world of 2030 “will be radically transformed.”

1. MEGATRENDS AND RELATED TECTONIC SHIFTS

1. **Individual Empowerment.** This “most important megatrend” (both a cause and effect of most other trends) will “accelerate substantially during the next 15-20 years owing to poverty reduction and a huge growth of the global middle class, greater educational attainment, and better health care.” (p. iii) For the first time, “a majority of the world’s population will not be impoverished,” due to the expanding global economy, rapid growth of developing countries, and widespread use of new communications and manufacturing technologies. “The potential for greater individual initiative (is) key to solving the mounting global challenges over the next 15-20 years. On the other hand, in a tectonic shift, individuals and small groups will have greater access to lethal and disruptive technologies (particularly precision-strike capabilities, cyber instruments, and bioterror weaponry).” (p. iii) [Also see **Lone Wolf Terrorism: Understanding the Growing Threat** by Jeffrey D. Simon (Prometheus Books, Feb 2013).]
2. **Diffusion of Power.** Asia will surpass North America and Europe combined in terms of global power based on GDP, population size, military spending, and technological investment. China alone will probably have a larger economy than the US a few years before 2030. The health of the global economy increasingly will be linked to how well the developing world does: in addition to China, India, and Brazil, regional players such as Colombia, Indonesia, Nigeria, South Africa, and Turkey will become especially important. [Also see *GFB Update* newsletter for April 2012 on the emerging multipolar world.] “The shift in national power may be overshadowed by an even more fundamental

* The quadrennial Global Trends report of the National Intelligence Council appears to have several serious deficiencies, notably a downgrading of climate change impacts. A companion review of an earlier report on **Climate Change and National Security**, based on a 2008 NIC-sponsored workshop, provides an important Supplement

shift in the nature of power: enabled by communications technologies, power will shift toward multifaceted and amorphous networks that will form to influence state and global actions.” (p.iv)

3. **Demographic Patterns.** Global population will be close to 8.3 billion people in 2030, up from 7.1 billion in 2012. Four demographic trends will fundamentally shape economic and political conditions: aging countries (facing an uphill battle to maintain living standards), a shrinking number of youthful societies, migration, and urbanization (urban construction in the developing world “could roughly equal the entire volume of such construction to date in world history”).
4. **Growing Food, Water, and Energy Nexus.** “Demand for food, water, and energy will grow by approximately 35, 40, and 50% respectively owing to an increase in the global population and the consumption patterns of an expanding middle class” (p.iv). Nearly half of the world’s population will live in areas experiencing severe water stress. Climate change will worsen the outlook for availability of these critical resources, as wet areas get wetter and dry areas get more so. “We are not necessarily headed into a world of scarcities, but policymakers and their private sector partners will need to be proactive to avoid such a future. Many countries probably won’t have the wherewithal to avoid food and water shortages without massive help from outside.” (p.4) In a likely tectonic shift, the US could become energy-independent. Hydrofracking technology has expanded the life of natural gas reserves from 30 to 100 years and also enabled additional crude oil production such that crude oil prices could collapse, causing a major negative impact on oil-export economies. [Also see **Full Planet, Empty Plates: The New Geopolitics of Food Security** by Lester R. Brown (W.W. Norton, Oct 2012), which underscores and amplifies food and water scarcity. Brown warns that “armed aggression is no longer the principal threat to our future; the overriding threats in this century are climate change, population growth, spreading water shortages, rising food prices, and politically failing states” (p.121).]

2. GAME-CHANGERS

1. **The Crisis-Prone Global Economy.** Various regional and national economies will “almost certainly” move at significantly different speeds, reinforced by the 2008 global financial crisis. China—despite a likely slowing of its growth from 10% to only 5%—will contribute about one-third of global growth by 2025. The key question is whether the divergences and increased volatility will result in a global breakdown and collapse or whether the development of multiple growth centers will lead to resiliency. “A return to pre-2008 growth rates and previous patterns of rapid globalization looks increasingly unlikely, at least for the next decade... (and) another major global economic crisis cannot be ruled out.” (p.vi) The McKinsey Global Institute estimates that the potential impact of an unruly Greek exit from the euro zone could cause eight times the collateral damage as the Lehman Brothers bankruptcy.

2. ***The Governance Gap.*** As power becomes more diffuse, “a growing number of diverse state and non-state actors, as well as subnational actors, such as cities, will play important governance roles. The increasing number of players needed to solve major transnational challenges—and their discordant values—will complicate decision-making. Lack of consensus between and among established and emerging powers suggests that multilateral governance to 2030 will be limited at best. The chronic deficit probably will reinforce the trend toward fragmentation” (p.vii). Prospects for achieving progress on global issues will vary across issues. Some 50 countries are in the awkward stage between autocracy and democracy, and “many countries will still be zigzagging their way through the complicated democratization process.” Other countries such as China and the Gulf countries will continue to suffer from a democratic deficit. Widespread use of IT will be a double-edged sword: social networking will enable citizens to coalesce and challenge governments, but IT will provide governments with unprecedented ability to monitor their citizens. The largely Western dominance of global structures such as the UN Security Council, World Bank, and IMF will probably be transformed by 2030 to be more in line with the new economic players.
3. ***Potential for Increased Conflict.*** The past two decades show fewer major armed conflicts and fewer civilian and military casualties. Disincentives will remain strong against great power conflict: too much is at stake. Intrastate conflicts have gradually increased and will likely do so in countries with a youthful ethnic minority and insufficient water and arable land. “Though by no means inevitable, the risks of interstate conflict are increasing owing to changes in the international system. US unwillingness and/or slipping capacity to serve as a global security provider could contribute to instability. Three “baskets of risks” could increase chances of interstate conflict: changing calculations of key players (notably China, India, and Russia), increasing contention over resources, and a wider spectrum of more accessible instruments of war.”
4. ***Wider Scope of Regional Instability.*** “The Middle East and South Asia are the two regions most likely to trigger broader instability” (p.viii). If the Islamic Republic maintains power in Iran and is able to develop nuclear weapons, the Middle East will face a highly unstable future. “South Asia faces a series of internal and external shocks during the next 15-20 years” (youth bulges, rising food prices, energy shortages, inequality). An increasingly multipolar Asia is one of the largest global threats. Countries in Sub-Saharan Africa, Central America, and the Caribbean will remain vulnerable to state failure through 2030, providing safe havens for global criminal and terrorist networks and local insurgents.
5. ***Impact of New Technologies.*** Four “technology arenas” will shape economic, social, and military developments: *Information Technology* entering the big data era (providing global access and pervasive services, but also threats of an Orwellian surveillance state); *New Manufacturing and Automation Technologies* such as 3-D printing and robotics with the potential to change work patterns (they will improve productivity and diminish the need for outsourcing, but make more low-skilled workers redundant and exacerbate inequality); *Security of Vital Resources* (key resource technologies include GM crops,

precision agriculture, better irrigation, solar energy, advanced biofuels, and enhanced oil and gas extraction via fracturing); *New Health Technologies* (they will continue to extend the average age of populations around the world by ameliorating debilitating physical and mental conditions and improving overall well-being; the greatest gains are likely to be in countries with developing economies and an expanding middle class).

6. ***The Role of the United States.*** The relative decline of the US and the West vis-à-vis the rising states “is inevitable,” but the degree to which the US continues to dominate the international system could vary widely. “The US most likely will remain first among equals among the other great powers in 2030,” but the unipolar moment is over and Pax Americana is “fast winding down.” Western partners have also suffered relative economic declines. Replacement of the US by another global power seems the least likely outcome to 2030. The emerging powers are not a bloc, and do not have any unitary alternative vision. “A collapse or sudden retreat of US power would most likely result in an extended period of global anarchy.”

3. POTENTIAL BLACK SWANS THAT WOULD CAUSE THE GREATEST DISRUPTIVE IMPACT

In the midst of the summary of “Game-Changers” (pp.vi-xii), a single page chart (p.xi) with no explanation and no listing in the table of contents briefly describes eight such developments: 1) a severe pandemic that “could result in millions of people suffering and dying” in less than six months; 2) much more rapid climate change (“most scientists are not confident of being able to predict such events”); 3) Euro/EU collapse caused by an unruly Greek exit from the euro zone; 4) a democratic China could dramatically boost Chinese “soft” power worldwide; an economic collapse could trigger political unrest and shock the global economy; 5) a reformed Iran (a more liberal regime that dropped nuclear weapons aspirations and focused on economic modernization would bolster chances for a more stable Middle East); 6) nuclear war or WMD cyber-attack (“the chance of non-state actors conducting a cyber-attack—or using WMD—is increasing”); 7) solar geomagnetic storms that could knock our satellites or the electric grid; 8) a collapse or sudden retreat of US power.

4. ALTERNATIVE WORLDS

“We have more than enough information to suggest that *however rapid change has been over the past couple decades, the rate of change will accelerate in the future.*” (p.xii; emphasis added). To “encourage all of us to think more creatively about the future,” four scenarios are provided with “built-in discontinuities” that represent distinct pathways for the world out to 2030.

1. ***Stalled Engines.*** This “most plausible worst case” is a “bleak future” where the US and Europe turn inward, the euro zone unravels quickly causing Europe to be mired in recession, the US energy revolution fails to materialize, global economic growth falters, Sunni-Shiite violence erupts in the Gulf, a deadly virus erupts in Southeast Asia, and “all boats sink.”

2. **Fusion.** The “most plausible best case” in which the US, China, and Europe dampen the specter of a spreading conflict in South Asia leading to a major change in bilateral relations and worldwide cooperation to deal with global challenges; China begins a process of political reform, bolstered by its increasing role in the international system; global unilateral institutions are reformed and made more inclusive; the global economy nearly doubles in real terms to \$132 trillion, and “all boats rise substantially.” Technological innovation “is critical to the world staying ahead of the rising financial and resource constraints,” and this scenario is only possible with strong political leadership.
3. **Gini Out-of-the-Bottle.** A world of extremes and greater inequality (as measured by the Gini Coefficient widely used by economists), where countries in the euro zone core are globally competitive, while others on the periphery are forced to leave the EU; cities in China’s coastal zone continue to thrive but inequalities increase and social discontent spikes; major powers are at odds and more countries fail; the world is reasonably wealthy but less secure as “the dark side of globalization” poses an increasing challenge. “Differences between haves and have-nots become starker and increasingly immutable.” Parts of Africa suffer the most, and a growing number of states fail. Marxist and Maoist-insurgencies increasingly spread in rural areas worldwide, as globalization spawns more class struggle.
4. **Non-state World.** NGOs, multinational businesses, academic institutions, wealthy individuals, and megacities flourish and take the lead in confronting global challenges. A growing global public opinion consensus among elites and many of the growing middle classes forms the base of their support. Authoritarian regimes find it hardest to operate in this increasingly democratized world. Smaller and more agile countries in which elites are more integrated are apt to do better than larger countries. “Networks thrive in this hyper-globalized world where expertise, influence, and agility count for more than weight or position.” This is nevertheless a patchwork and very uneven world, where some global problems get solved, but security threats pose an increasing challenge.

5. COMMENT: “BLACK SWAN DOWNSIZING” AND OTHER COMPLAINTS

This global synthesis of megatrends and game-changers offers many important ideas, and is well-worth considering, especially for the emphasis that the world of 2030 will be radically transformed, and the highlighting of power diffusion, various game-changers, and four scenarios of worst case growth (all ships sinking), best case growth (all ships rising), far greater inequality, and a world of powerful non-state actors.

The GT2030 report seems to be thorough and comprehensive, with three pages of acknowledgements (pp.138-140) citing various workshops, institutions, and individuals consulted in 20 countries. This includes the International Futures model of the University of Denver Pardee Center, the Global Growth Model of McKinsey & Company, the Atlantic Council of the US, Gregory Treverton of RAND, the LBJ School of Public Affairs, the Santa Fe Institute, the Naval Postgraduate School, the China Center for Contemporary World

Studies, Russia's Institute of World Economy and International Relations, and much more. However, it appears that few if any climate scientists and environmental scientists are on this list, and UN and OECD reports are ignored. "Sustainability" and anything related to threatened planetary boundaries are nowhere to be found in the report, and there is no mention of "Green Growth" advocated by OECD and the World Bank; rather, the industrial era notion of "growth" as measured by GDP is used throughout, with no qualifications as to its many problems.

The Global Trends report does mention more extreme weather due to climate change, but the likelihood of worsening climate—viewed by many as the overriding issue of the 21st century—is relegated to a box on p.31 (which does acknowledge that sea level could rise by a meter or more by 2100) and to far-out "black swan" status. The Megatrend on growing demand for food, water, and energy does mention climate change exacerbating availability of these critical resources, but downplays the problem with the upbeat note that "we are not necessarily headed into a world of scarcities." This is certainly possible, but how likely?

The curious box on p.xi, not listed in the table of contents, describes eight "potential black swans." No definition of Nassim Nicholas Taleb's trendy term is provided by NIC, but Taleb defines it as "highly improbable," a *rara avis* that implies far less than classic wild card probability of 2% (a joker in a deck of cards), especially over the next 15-20 years. The question of rough-gauge probability is very important, because most climate scientists would very likely assign a far greater probability of "much more rapid climate change," placing it in the 10-40% "not-so-wild card" range, if not a probable or near-certain development. Similarly, public health experts would likely view a "severe pandemic" as more probable than a mere black swan. From a scholarly viewpoint, this is a sloppy treatment of a critical concern.

Climate change is already a serious problem in many major countries, as described in **Climate Change and National Security**, an NIC-sponsored study not acknowledged by GT2030 (see following GFB review). One of the four Megatrends in the 2012 report, "Diffusion of Power," cites eight nations as emerging global and regional economic powers, of which six of them are assessed as having serious climate-related problems as of 2008 (China, India, Colombia, Nigeria, South Africa, and Turkey), very likely to worsen in the years ahead.

The key criticism is that climate change deserves to be listed as one of the NIC Megatrends, if not the most important one. Doing so, however, questions any plausibility of the all-boats-rising "Fusion" scenario and would likely displace substantial acceleration of individual empowerment as the NIC's "most important megatrend." Not that empowerment isn't desirable, but it is far more problematic than NIC forecasts (or wishes), especially if seen in the context of mounting problems of climate change and environmental degradation. This is extensively explained in **Global Environment Outlook 5** (UN Environmental Programme, June 2012, 525p) and by **OECD Environmental Outlook to 2050: The Consequences of Inaction** (March 2012, 350p). Two recent reports to the Club of Rome continue this theme: **Bankrupting Nature: Denying Our Planetary Boundaries** by Anders Wijkman and Johan Rockström (Routledge, 2012; GFB Book of the Month, Jan 2013), which warns that "pres-

tures on key ecosystems have increased exponentially,” and **2052: A Global Forecast** by Jørgen Randers (Chelsea Green, 2012; GFB Book of the Month, July 2012), which points to rising climate-related costs reducing global consumption (and thus “individual empowerment”).

Another criticism of the Global Trends report is that game-changing black swans and wild cards are under-reported. In addition to the eight “potential black swans” on p.xi, several others are scattered throughout the text, e.g. natural disasters that might cause governments to collapse (p.49), spread of wheat rust (p.34; a “nasty wild card”), accelerated melting of the Greenland ice sheet and/or the West Antarctic ice shelf (p.31), a huge volcanic explosion or earthquake (p.49), and methane gas levels rising rapidly due to melting tundra (p.119). A few other wild cards (or not-so-wild cards) for better and/or worse should also have been added, such as collapse of ecological services such as bee pollination, “a deadly disease killing two billion people” (suggested by Jørgen Randers, and starkly contrasting with the NIC’s “black swan” of a pandemic afflicting and killing merely “millions”), widely available life extension technologies, many new life forms created by synthetic biology, nanotechnology extensively developed, discovery of extraterrestrial intelligence, and some new source of energy that is cheap, non-polluting, and widely available.

The four concluding scenarios are all illuminating (especially Nonstate World), but none of them consider environmental conditions, other than a brief mention in passing in the Fusion scenario that “Arctic ice melts at a far more rapid rate than anticipated and rampant exploitation of resources in the Arctic has begun” (p.119). Surely the threats of climate change deserve featuring in at least one scenario, and some mention in all. See, for example, **America’s Climate Choices** by the National Research Council (National Academies Press, May 2011, 118p; GFB Book of the Month, Oct 2011), a synthesis of four NRC panel reports totaling 1,444 pages, warning that climate change “poses significant risks for a broad range of human and natural systems.” In Canada, **Paying the Price: The Economic Impacts of Climate Change for Canada** (National Roundtable on the Environment and the Economy, Sept 2011, 168p; www.nrtee/trnee.ca) covers costly impacts on timber supply, coastal areas, health care, and ecosystem stress. A recent popularized overview, **Overheated: The Human Cost of Climate Change** by Andrew Guzman of the UC-Berkeley Law School (Oxford University Press, Feb 2013, 260p), summarizes sea level rise, food and water challenges, the many negative impacts on human health, and potential climate wars in the Middle East and elsewhere.

Speaking of the Middle East, no mention is made in GT 2030 of intensified faiths and rising Islam, two closely related “Mega-Trends” identified by former RAND analyst Yehezkel Dror of the Hebrew University of Jerusalem in **Israeli Statecraft: National Security Challenges** (Routledge, 2011; GFB Book of the Month, Sept 2011). One doesn’t have to be an Israeli to see these trends, but apparently it helps! Dror also identifies megatrends similar to GT2030 (e.g., more non-state actors, intensified kill and damage capacity, declining US hegemony) and likely “ruptures” (notably necessary for expensive and difficult global action on climate issues, as well as rising power of civilizations not based on the Bible).

A final complaint about the selective perception and distorted priorities of GT2030 is the report's focus on the industrial era definition of "growth," at a time of mounting criticism of mainstream economics for lack of attention to natural resources. (See *GFB Update* newsletter for Sept 2012 on new and appropriate economics). Placing a fair economic value on water and other ecosystem services, as advocated by the UN, World Bank, OECD, and scores of economic critics, would surely be a "game-changer" worth noting and promoting. Changing the economic focus from "Growth" to "Health," as advocated in the **Re/Source 2050** report from the Smith School of Enterprise and the Environment at the University of Oxford (Jan 2013, 83p; www.smithschool.ox.ac.uk), addressed to the financial and investor communities and advocating a "circular economy," would also be a positive "game-changer" worth considering.

In sum, when all the worthy "megatrends" are brought together and given proper priorities, the outlook to 2030 is even more worrisome than portrayed by the NIC. But if all of the positive "game-changers" were also assembled, as concerns sustainability and Green Growth, low-carbon economies, the benefits of energy conservation (see the IEA's **World Energy Outlook 2012**; Nov 2012, 668p; GFB Book of the Month Nov 2012; stressing the benefits of improved efficiency over new energy sources), and a focus on decent jobs for all and economic reform at national and global levels, the overall outlook would be much improved. Surely we deserve better from the National Intelligence Council.

Climate Change and National Security: A Country-Level Analysis

Edited by Daniel Moran

(Prof of National Security Affairs, Naval Postgraduate School, Monterey, CA).

Washington: Georgetown University Press, April 2011, 310p, \$29.95pb.

This extraordinary book “seeks to appraise the intermediate-term security risks that climate change may pose to the United States, its allies, and to regional and global order,” (p.1) and to be “broadly representative of the security challenges that climate change may pose during the next few decades.” (p.3) It considers the most readily anticipated effects of climate change, along with known political and social conditions of important states and regions, based on country-level data prepared by Columbia University’s CIESIN (Center for International Earth Science Information Network). CIESIN’s data on temperature change, freshwater availability, and sea-level rise are summarized in Appendixes A and B.

These meticulous and amply-documented essays originated as presentations at a workshop sponsored by the National Intelligence Council, prepared for the U.S. House of Representatives in June 2008. But are the forecasts for 2030 out-of-date? Not at all. As stated by Daniel Moran in his conclusion, “it is most unlikely that any new insight will be achieved in the next twenty years that will falsify today’s scientific consensus so decisively as to render the issue of climate change inconsequential to public life.” (p.269)

Many books on climate change have been published, and many of these warn in general about floods, droughts, storms, threats to agriculture, and displaced populations. The value of these essays is that they are country-specific, as concerns questions of state capacity, social resilience, population movement, and the differential impact of climate change across the agricultural and industrial sectors, and on sub-national regions. “The most important source of cohesion among the contributors to this book is a shared sense that, whether or not the Earth’s climate is palpably hotter in twenty years than it is now, the politics that surrounds climate almost certainly will be.” (p.269) It may be easy to underestimate the threat that climate change poses to the stability of otherwise well-established regimes. Climate change poses an especially insidious sort of challenge to policy, combining gradual accumulation of relatively subtle effects and an increasing tendency toward dramatic events liable to galvanize public opinion. “*Climate change will, without question, provide many opportunities for governments to embarrass themselves.*” (p.271). These strains will not necessarily lead to outright state failure, but such an outcome is possible.

Chapters are as follows. Note especially the growing fragility and/or serious threats to China, Vietnam, The Philippines, India, Pakistan, Bangladesh, Turkey, Egypt, The Maghreb, and Southern Africa.

1. **China.** “Climate change is expected to wreak havoc on China” through decreased precipitation (declining runoff to the six largest rivers in China has been observed since the 1950s), increased desertification, increased severity and frequency of weather events such as heat waves, glacial melt with severe impact on lakes and rivers, and sea-level rise of 0.4 to 1.0 meter by 2050 (which would submerge an area the size of Portugal

along China's eastern seaboard, e.g.: most of Shanghai is less than 2 meters above sea level). Due to climate change, "domestic instability within China is probable if current trajectories continue." (p.13) Particularly at risk are China's agricultural system and its ability to maintain strong economic development and foreign trade.

2. **Vietnam.** The world's 13th most populous country [89 million in 2010] is poised to become a major regional actor in the next two decades, but global climate change places it in jeopardy: "Vietnam is likely to be one of the countries most affected by global climate change." (p.38) It is one of the most disaster-prone countries in the world, with a coastline of 3,200 km regularly lashed by typhoons producing large-scale flooding, and tropical storms are increasing in frequency and impact.
3. **The Philippines.** Rising sea levels pose an enormous risk to a country [94 million people in 2010] with 7,150 islands and >36,000 km of coastline, and some 15 million people living in the 1-meter low-elevation coastal zone. Even in the best of times, the frequency of typhoons, floods, earthquakes, and volcanic eruptions makes the Philippines one of the most disaster-prone countries. Recent decades have brought unprecedented and mounting levels of stress in every major ecological zone, after "decades of sustained environmental degradation." Urban areas are also under mounting stress, with major infrastructure deficits in water, sewage, drainage, transport, and pollution control.
4. **Indonesia.** The world's fourth most populous country [236 million in 2010] has >17,000 islands and a coastline of >54,000 km. Nearly all major cities are in coastal areas vulnerable to rising sea levels, although only 1.1% of the population is in the 1-meter zone. Temperature changes are expected to be relatively modest, but, even so, can affect important food sources such as rice, maize, and fisheries.
5. **India.** Water shortages will affect agricultural production, especially in already-arid areas. Snow melt from the Himalayan glaciers could alternate between abnormally low flows in early summer and winter and very high flows during the monsoon, "posing the double risk of drought followed by flood." If monsoonal rains become increasingly erratic, "there will likely be serious food shortages in the regions that depend on them." If so, rich/poor and urban/rural gaps could widen further. The vulnerability of a large portion of India's population is likely to be worsened by climate change. A large-scale migration of Bangladeshis to India could produce major conflicts, and relations with Pakistan are likely to be further complicated by disputes over water.
6. **Pakistan.** In the next 20 years, climate change will stress the Pakistan state and exacerbate its current fragility. But climate threats "will almost certainly be dwarfed by other political, economic, and military factors in determining (Pakistan's) fate." If the Pakistani state collapses before 2030, it will not be because of climate change alone. But "climate change will contribute to domestic and regional competition, conflict, and hardship during the next 20 years."
7. **Bangladesh.** The 7th most populous country in the world [164 million people in 2010] is "extraordinarily vulnerable to the impacts of climate change, particularly rising sea levels." Bangladesh has already been ravaged by catastrophic floods in 1998, 2004,

and 2007, and floods are occurring more frequently. A 1-meter rise in sea level would submerge one-fifth of the country. “The disruptive possibilities of climate change, both internally and externally, may weaken the capacity of the Bangladeshi state in many ways. They may also strengthen its authoritarian tendencies.” (p.109) Complete failure of the state is very unlikely, but the combination of limited resources, simmering public discontent, and possible radicalization may accentuate the crisis of governance. Sea-level rise, severe storms, repeated floods, increased water salinity, and worsening water scarcity will affect the availability of food.

8. **Russia.** Geology, geography, and climate may make Russia not merely a survivor, but a beneficiary of environmental changes elsewhere experienced as deterioration. Rising global temperatures are likely to reduce stresses and constraints of life in the high northern latitudes, and should reduce heating costs. Rising sea level is unlikely to flood significant areas, and changes in temperature and rainfall may benefit agriculture on balance. Thawing could unlock “vast known reserves of oil, natural gas, and other natural resources.” But climate change will create stresses that affect Russia indirectly; the worst-case scenario of climate-induced violence would arise from conflict with China. An influx of southern immigrants due to climate change is likely to reignite violence in the North Caucasus (or Caspian) region.
9. **Central Asia.** The five former Soviet countries already face notable risks of destabilization. Probable areas of concern in order of likely magnitude: locally significant shortages of water, immigration/refugee flows from Afghanistan and China, food shortages from fluctuations in harvests or food prices, and an increased appetite for authoritarianism as a way to address problems of resource scarcity.
10. **European Union.** Although climate change poses “significant risks to vulnerable infrastructure and health,” the primary areas of concern are environmental migrants from neighboring regions, sea-level rise, and changes to the geopolitics of the Arctic. Threats to availability of water and food among Europe’s less-developed trading partners are a particular concern. “It seems certain that the politics of climate change will retain a prominent place in European public life.” Transatlantic climate politics appear likely to remain contentious. “The EU appears poised to sustain global leadership on the issue, possibly adding to the global sense that the US is to blame for accelerating climate change.” (p.149)
11. **Turkey.** Serious environmental stress in coming decades may lead to both conflict and external aggression, in addition to population movements. Rising temperatures will have their most adverse effect on the southeastern part of Turkey. Tourist sectors of Turkey will suffer from rising water levels. Increasing erosion has led to a substantial loss of topsoil, reducing agricultural output and raising food prices. A UNDP study estimates that 86% of Turkey’s total land area is vulnerable to desertification. Water will most likely become a scarce commodity, and illegal trade in water supplies may emerge.
12. **Persian Gulf.** The region is one of the world’s hottest, most water-starved environments, with water demand projected to double by 2025. All of the Gulf states have taken

dramatic steps to build desalinization plants. Despite these prudent steps, Persian Gulf regimes will remain vulnerable to fluctuations in global energy markets and “will face profound environmental stresses resulting from climate change in the coming decades.” Governments will continue to “publicly embrace green development policies at home while joining together with other states to forestall a global system that will limit emissions... They will also seek to avoid schemes that distribute their wealth to the less-developed world to pay for climate-related mitigation and adaptation efforts.” (p.173)

13. **Egypt.** Rapid population growth will increase demand for water and energy resources, at the same time that rising temperatures may reduce drinking water from the Nile Basin, which provides 95% of Egypt’s water. Concentration of population and economic production in the Nile Delta means that many Egyptians will likely suffer due to even a moderate rise in global sea level. One Egyptian environmental expert views Egypt as “the third most vulnerable country in the world to climate change, surpassed only by Bangladesh and Vietnam.” The World Bank concludes that climate change would result in “catastrophic consequences” for Egypt.
14. **The Maghreb.** Climate change will affect Morocco, Algeria, Tunisia, and Libya in profound ways, and these countries are “already characterized by exceedingly fragile environmental conditions.” The agriculture sector is precarious, with temperatures and dry days expected to rise, resulting in decreased yields of key crops. Coastal regions are at risk from sea-level rise and inundations, and accompanying salinization of coastal groundwater. This will have an impact on the tourism sector. The major domestic social impact from climate change will be accelerated and probably chaotic urbanization, as migrants leave stressed rural areas. Climate refugees from the Sahel and Sub-Saharan Africa will create further stress and civil conflict.
15. **West Africa I.** “By 2030 considerable parts of Nigeria may confront issues related to climate change, which could seriously affect agricultural production, water availability, and coastal environmental conditions.” Desertification in the north and erosion elsewhere are major concerns. A rise in sea level may pose serious risks to important parts of the country. In a worst-case scenario, climate change could contribute to state failure. Senegal faces the most widespread and adverse climate change problems, but its ability to cope surpasses that of Nigeria and Cote d’Ivoire.
16. **West Africa II.** Projected 2030 climate changes for Guinea, Liberia, and Sierra Leone are modest. Given the history of instability in the region, “climate change adds only a few drops of fuel to this tinderbox.”
17. **Southern Africa.** Much of what is probable in the next 20-30 years has already begun in many parts of the region: increasing temperature, more frequent and severe drought, and problems of freshwater availability. Climate change will likely lead to conflict over food, access to water, and economic opportunity. South Africa accounts for 80% of water use in Southern Africa, but only 10% of the total water resource.
18. **The Northern Andes.** Bolivia in 2030 will be in the worst position of the region’s countries in agricultural productivity. Ecuador will be in the worst position in the event

of a 1-meter rise in sea level. Glacier retreat is a critical issue not only in Bolivia and Ecuador, but in Peru and Colombia. All four countries are experiencing high or rising level of social conflict and political turbulence, making this region the most volatile part of Latin America. “The nature of political and civil society in these four countries leaves little room for optimism about effective responses to the challenges of climate change.” (p.256). However, there is substantial and growing variation in the capacity of subnational governments in each of these countries.

19. **Brazil.** The largest country in Latin America is taking steps toward a leadership position in global climate change negotiations. Brazil does face climate change risks, especially the likelihood of increasing internal migration from the Northeast to the Southeast, and from rural areas to major cities. There is potential for great political stability in the region, however, because of Paraguay’s vulnerability to climate change. There is also “widespread” but exaggerated anxiety in Brazil that the ecologically important Amazon region will be internationalized.

Some important conclusions by Moran (all on p.272):

- “climate change is likely to increase social inequality within countries at almost every level of development”;
- “it is also likely to heighten strains between urban and rural populations, a crucial fault line throughout the developing world, and one across which large-scale population movements are likely to be especially stressful”;
- “the critical path connecting climate change to social and political failure lies less through rising temperatures or rising sea level than through the changing distribution of freshwater”;
- “as public consciousness of climate change and its perils expands, so too will public awareness that the historical responsibility for these perils is not universally shared but lies at the feet of a handful of states”; China is now the largest producer of greenhouse gases, and Indonesia will soon outstrip all of the EU as a carbon emitter; India and Russia also rank high in generating greenhouse gases; “however, none of these nations is likely in the period that concerns us, to surpass the United States on a per capita basis.”

COMMENT

Through detailed socio-political analysis of individual nations—and regions within them—one can gain a far greater appreciation of the specific impacts of climate change in the decades ahead, and well-populated countries that are most at risk: Bangladesh, China, India, Vietnam, The Philippines, Turkey, Egypt, Nigeria, and South Africa. The only complaint with this book is that it invites curiosity about other countries, e.g. Canada (probably a net loser; see www.nrtee-trnee.ca), the U.S. (a net loser, especially in arid regions), Mexico (expecting increased temperature and decreased precipitation; a strong national climate change law was passed in April 2012), Japan and South Korea (presumably taking steps toward sustainability), and Australia (where many weird weather events have recently taken place).

World Energy Outlook 2012

International Energy Agency (Paris). Paris: IEA (dist. by OECD), Nov 2012, 668p, 150 euros (PDF E120) from www.iea.org or OECD. (www.worldenergyoutlook.org)

The quantity and quality of energy supply are central to our future. This annual report is, by far, the most extensive and authoritative survey of energy trends, which are projected to 2020 and 2035. Much press attention, at least in the US, has been given to the startling forecast that the US will become the world's largest oil producer by 2020 (see below). But there is much, much more to this important report that deserves attention.

Notably, a central theme of the IEA report involves four scenarios: **Current Policies** (business as usual baseline), **New Policies** (the central scenario, assuming recently-announced commitments cautiously adopted), **450 Scenario** (policies providing a 50% chance of limiting global increase in temperature to 2°C, and CO₂ at 450ppm), and **Efficient World Scenario** (all economically viable energy investments are made, which lowers growing demand for fossil fuel and boosts economic output.)

Many people worldwide applaud the transition to renewable sources of energy. So does the IEA, but, as indicated here, there is still a long way to go before renewables make a major impact. Conversely, many people also believe that we have reached or will soon reach the point of "peak oil," which will accelerate use of renewables. This wishful thinking is nowhere to be found in the hard-nosed IEA report, which views global oil demand rising through 2035, with any shortfalls made up by "unconventional oil" and rapid development of Iraq's extensive oil resources. Not good news for climate change, of course, but these are the sober realities ahead. "Wild cards" may appear (e.g., a US carbon tax, new technologies not on the horizon), but IEA does not consider them.

The quotations below are merely a small sampling of the many significant points that are made in this dense report.

1. GENERAL FINDINGS (*emphasis added*)

1. **US Developments.** "*Energy developments in the US are profound*" and their effect will be felt worldwide. "By around 2020, the US is projected to become the largest global oil producer (overtaking Saudi Arabia until the mid-2020s) and starts to see the impact of new fuel-efficiency measures in transport. The result is *a continued fall in US oil imports, to the extent that North America becomes a net oil exporter by 2030.*" (p.23) Even a few years ago, output of oil and gas had been widely assumed to be in inevitable decline. "*This energy renaissance has far-reaching consequences for energy markets, trade, and, potentially, even for energy security, geopolitics, and the global economy.*" (p.74)
2. **Sustainability.** "Taking all new developments and policies into account, *the world is still failing to put the global energy system onto a more sustainable path.*" (p.23) Even with the New Policies Scenario—our central scenario—"global energy demand grows

by more than one-third over the period to 2035.” Despite growth in low-carbon sources of energy, “fossil fuels remain dominant in the global energy mix, supported by subsidies that amounted to \$523 billion in 2011, up almost 30% on 2010 and six times more than subsidies to renewables.” (p.23)

3. **Emissions.** “*Emissions in the New Policies Scenario correspond to a long-term average global temperature increase of 3.6°C.*” (p.23)
4. **Efficiency.** “Energy efficiency is widely recognized as a key option...but current efforts fall well short of tapping its full economic potential.” (p.24) Even with New Policies in place, four-fifths of the potential in the buildings sector and more than half in industry still remain untapped.
5. **The 2°C Goal.** “*The climate goal of limiting warming to 2°C is becoming more difficult and more costly with each year that passes.*” (p.25) The 450 Scenario examines actions necessary to achieve this goal, finding that “almost four-fifths of the CO₂ emissions allowable by 2035 are already locked in by existing power plants, factories, buildings, etc.”
6. **Electricity Access.** “Despite progress in the past year, *nearly 1.3 billion people remain without access to electricity and 2.6 billion do not have access to clean cooking facilities.*” (p.29) Nearly \$1 trillion in investment is needed to achieve universal energy access by 2030, and abandon use of traditional biomass.
7. **“Thirstier” Energy.** Water is essential for energy production: for power generation, for extraction and processing of oil/gas/coal, for transport, and increasingly for crop irrigation to produce biofuels. “*The projected rise in water consumption of 85% over the period to 2035 reflects a move towards more water-intensive power generation and expanding output of biofuels.*” (p.29) In sum, “energy is becoming a thirstier resource,” and water is growing as a criterion for assessing the viability of energy projects. The vulnerability of the energy sector to water constraints is widespread, affecting, among others, shale gas development, power generation, and Canadian oil sands.
8. **Energy Prices.** Price remains an important determinant of energy trends, and “history has shown that *energy prices are notoriously difficult to predict.*” (p.38) It is unlikely that the future will follow any of the precise paths in the four IEA scenarios, which simply demonstrate how markets could evolve under certain conditions. (In the New Policies scenario, the average crude oil import price rises to \$120/barrel in 2020 and \$125/barrel in 2035. Under the Current Policies Scenario, higher prices are needed to balance supply with the faster growth in demand reaching \$145/barrel in 2035. In the 450 Scenario, lower oil demand means less need to develop costly oil and a decline to \$100/barrel by 2035).
9. **Iraqi Oil.** “*Iraq makes the largest contribution by far to global oil supply growth.*” (p.26) Its ambition to expand output after decades of conflict is not limited by the size of its resources or costs of production. Four chapters are devoted to the Iraq outlook for oil and gas (pp.385-498). Oil output is expected to rise from 3 million barrels/day in mid-

2012 to 6 mbd in 2020 and 8.3 mbd in 2035 (11 mbd in the high case; 5.3 mbd in the delayed case). Without this supply growth, oil prices would be almost \$15/barrel higher by 2035. Iraq stands to gain almost \$5 trillion from oil exports through 2035. In 2012, the Iraqi Ministry of Oil announced 143 billion barrels of proven reserves, and some 215 billion barrels of undiscovered resources. Exploration is expected to “add substantially to proven reserves over the coming decades.” (p.422)

10. **CCS Technology.** “The pace of development of carbon capture and storage technology remains highly uncertain. It could prove to be critical to the prospects for coal use in many regions.” (p.47) In the long term, it is also likely to be critical to prospects for natural gas and energy-intensive industries globally. The technology exists, “but only a handful of commercial-scale CCS projects are currently operating.”

2. THE FOUR SCENARIOS

1. **Current Policies Scenario.** The baseline, where government policies enacted or adopted by mid-2012 continue unchanged. Under this scenario, use of coal grows from 2,378 Mtoe in 2000 and 3,474 in 2010, to 4,417 in 2020 and 5,523 in 2035. Oil grows from 3,659 Mtoe in 2000 and 4,113 in 2010, to 4,541 in 2020 and 5,053 in 2035. CO₂ emissions rise from 30.2 Gt in 2010 to 44.1 in 2035. [NOTE: Clearly not acceptable.]
2. **New Policies Scenario.** Where existing policies are maintained, and recently-announced commitments and plans are implemented in a cautious manner. Under this “central” scenario, use of coal grows from 3,474 Mtoe in 2010 to 4,082 in 2020 and 4,218 in 2035. Oil grows from 4,113 in 2010, to 4,457 in 2020 and 4,656 in 2035. CO₂ emissions rise from 30.2 Gt in 2010 to 37.0 in 2035. [NOTE: Still not acceptable.]
3. **450 Scenario.** Rather than a projection based on past trends, a plausible energy path is described, consistent with actions having about a 50% chance of meeting the goal of limiting the global increase in average temperature to 2°C, which requires a limit of 450 ppm of carbon-dioxide equivalent in the atmosphere, now at about 390 ppm (some argue—strenuously—that a lower target is necessary; see Bill McKibbin’s www.350.org). In the 450 Scenario, coal grows slightly from 3,474 Mtoe in 2010 to 3,569 in 2020, and declines by a third to 2,337 in 2035. Oil also grows slightly from 4,113 in 2010 to 4,282 in 2020, declining to 3,682 in 2035. CO₂ emissions rise slightly from 30.2Gt in 2010 to 31.4 in 2020, and then decline to 22.1 in 2035. [NOTE: Far better than above, but still quite likely to be too little, too late, to forestall ruinous climate change.]
4. **Efficient World Scenario.** Explores the results of improving energy efficiency in every way that makes economic sense, involving necessary policies to eliminate market barriers. Four chapters are devoted to discussing efficiency (pp.267-384). Key steps include strengthening measurement and disclosure of energy efficiency to make gains more visible to consumers, regulations to prevent sale of inefficient technologies, and financing instruments. Realizing this scenario would boost cumulative economic output through 2035 by \$18 trillion. A chart on p.299 lists dozens of sub-sectors and technologies where improved efficiency is possible for industry, transport, and buildings.

Another chart on p.329 lists key policies by sector (e.g. stringent building codes, retrofits, retirement of inefficient industrial facilities, support for smart grids).

3. MAJOR SOURCES OF ENERGY

1. **Oil.** Even in the New Policies scenario, *“growth in oil consumption in emerging economies, particularly for transport in China, India, and the Middle East, more than outweighs reduced demand in the OECD, pushing oil use steadily higher.”* (p.26) Oil demand reaches 100 mbd in 2035, up from 87.4 mbd in 2011, and the average price rises to \$125/barrel in 2011 dollars by 2035. The transport sector now accounts for more than half of global oil consumption, and this share increases as the number of passenger cars doubles to 1.7 billion and the demand for road freight rises quickly (in part because fuel-economy standards for trucks are much less widespread). *“The net increase in global oil production is driven entirely by unconventional oil”* — light tight oil in the US and oil sands in Canada. (p.26)
2. **Natural Gas.** Global demand grows in all scenarios, but the outlook varies by regions. Low prices and abundant supply in the US enable gas to overtake oil around 2030 to become the largest fuel in the energy mix. China’s consumption will grow rapidly, from 130 billion cubic meters in 2011 to 545 bcm in 2035. Unconventional gas from hydrofracking accounts for nearly half the increase in global production to 2035, but there is uncertainty in many countries about the extent and quality of the resource base, and concerns about environmental impacts.
3. **Coal.** *“Coal has met nearly half of the rise in global energy demand over the last decade, growing faster even than total renewables.”* (p.27) Whether coal demand continues to rise strongly will depend on policies that favor lower-emissions energy sources, deployment of more efficient coal-burning technologies, and—especially in the longer term—CCS technology. Policy decisions carrying the most weight for the global coal balance will be in China and India, which account for almost three-quarters of projected non-OECD coal demand growth, whereas OECD coal use declines.
4. **Nuclear.** *“The anticipated role of nuclear power has been scaled back”* in the wake of the 2011 Fukushima accident. Japan and France seek to reduce nuclear power, while its competitiveness in the US and Canada is challenged by relatively cheap natural gas. Projections for growth in installed nuclear capacity are lower than in 2011. While nuclear output grows in absolute terms (driven by expanded generation in China, Korea, India, and Russia), *“its share in the global electricity mix falls slightly over time.”* (p.28)
5. **Renewables.** A steady expansion of hydropower and rapid expansion of wind and especially solar results in renewables will account for almost one-third of total electricity output by 2035. Consumption of biomass and biofuels grows four-fold. The rapid increase in renewables is underpinned by falling technology costs, rising fossil-fuel prices, carbon pricing, and especially by continued subsidies—from \$88 billion globally in 2011 to nearly \$240 billion in 2035.

Other chapter topics discuss electricity demand and supply, “emissions lock-in” (in that the average lifetime of energy infrastructure is long), oil production prospects under each scenario, water for energy and regional stress points, and measuring progress toward energy for all.

An Annex provides extensive tables for energy demand in various sectors and for energy sources through 2035 under each of the first three scenarios (for the world, US, OECD, US, Japan, EU, Russia, China, India, Africa, Latin America, and Middle East).

COMMENT

There is much that is worthwhile and important in these 668 pages of extensive IEA analysis, which include numerous charts and tables.

But several complaints should be aired:

1. No index is provided to enable quick access to specific topics scattered in the 668 pages.
2. The 450 Scenario and the Efficient World Scenario do not appear to be compared, nor is there any mention of how the two might be pursued together.
3. Only a single paragraph appears to be devoted to carbon capture and storage technology (CCS) to handle the anticipated increase in carbon emissions, and there is no mention of the role of endangered forests, oceans, and soils as carbon sinks.
4. Similarly, only a single paragraph is devoted to global geothermal electricity generation (p.230), expected to increase from 11 GW to 40 GW by 2035, but still a small share of renewables at that time. Testor et al. and Gore (see below) see far more promise.
5. At the least, a chapter on the world’s major energy companies would be helpful, but this topic seems to be taboo. For starters, see **Private Empire: ExxonMobil and American Power** by journalist Steve Coll (Penguin, May 2012, 685p, \$36), on the world’s largest energy giant, with operations in some 200 nations and territories.
6. The lack of considering potential “game-changing” wild cards (and not-so-wild cards), as regards both technology (e.g., small and widely-distributed nuclear reactors) and legislation (e.g., a carbon tax, especially in the US).
7. The 150 euro price will deter all but the largest organizations from purchase.

Global Energy Assessment: Toward a Sustainable Future, by the German Advisory Council on Global Change and the International Institute for Applied Systems Analysis (Cambridge University Press, Oct 2012, 1,882p, L75pb; www.globalenergyassessment.org), a huge analysis involving over 500 researchers, appears to offer even more than the IEA Outlook reviewed here. It emphasizes an integrated energy system strategy and options with multiple benefits, notably energy efficiency (the most cost-effective near-term option), renewables (which could be >90% of primary energy in some regions by 2050), and co-production (of synthetic transportation fuels, cooking fuels, and electricity with CCS). Similar to

the IEA Outlook, the GEA also advocates universal access to electricity and cleaner cooking fuels and stoves by 2030.

ALSO SEE three other very different energy overviews:

1. **Sustainable Energy: Choosing Among Options** (Second Edition) by Jefferson Testor and four others (MIT Press, Oct 2012, 1,019p, \$90) is a rather technical textbook, with 21 chapters on such topics as technical performance, project economic evaluation, energy systems, geothermal (the global resource base is large and well-distributed, and the technical potential is “vast”), ocean wave and tidal, energy management, synergistic complex systems, and all of the other usual energy sources.
2. **The Quest: Energy, Security, and the Making of the Modern World** by Daniel Yergin (Penguin, Sept 2011, 804p; GFB Book of the Month, Nov 2011), an engagingly-written overview that covers much if not all of the IEA topics: the new world of oil, the history of peak oil theory, the “shale gale” of unconventional gas and oil, climate and carbon, the potential for biofuel, and much more. But Yergin sees geothermal as “limited by geology and the availability of the right kind of ‘hot rocks’ underground.” (p.714)
3. **Our Choice: A Plan to Solve the Climate Crisis** by former Vice President Al Gore (Rodale, Nov 2009, 416p; GFB Book of the Month, April 2010), reporting on more than 30 “Solutions Summits” of leading experts convened by Gore, on such topics as the climate change threat, the potential of concentrated solar thermal power, biomass, geothermal power (potentially “the largest source of power in the US and world”), forests and soils as carbon sinks, depleted soils enhanced by biochar, limits of CCS, energy efficiency improvements, smart grids, and more. This book, which still has much to offer, provides the starkest contrast to the IEA analysis of what is desirable and feasible for addressing energy-related responses to climate change.

To conclude on a hopeful note, a recent article by Elizabeth Kolbert (*The New Yorker*, 10 Dec 2012, pp.29-30) reports on growing bi-partisan interest in a US **carbon tax**, which is now even supported by ExxonMobil. She cites Bob Inglis, a former Republican Congressman, who told the Associated Press that “*I think the impossible may be moving to the inevitable without ever passing through the probable.*” If so, as Kolbert notes, “it would have global significance”—surely as great as the recent upheaval in oil and gas supplies. And it would remind us, once again, of the need to be alert to a wide range of possibilities.

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*”. Furthermore it is now editing the CADMUS Papers.

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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.

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Economy is a human science concerned with the study of how conscious human beings and social groups apply and direct their energy, knowledge, skills and organizational capabilities to generate wealth, promote human welfare and enhance the well-being of all.

Garry Jacobs,
Steve Jobs: Nobel Laureate

America's democratic system, the one the world is supposed to look up to as a model, is suffering from exactly the problems the Founding Fathers were trying to avoid.

Graeme Maxton,
The Dogma of Democracy Gone Sour

Malthus was conscious that he had drawn an extremely dark picture of the human condition... he was convinced that the dark shades really are there, and that they form an important part of the picture.

John Scales Avery,
Malthus

The growth of wealth is a measure of humanity's capacity to integrate myriad points of production and consumption within an ever widening, increasingly interconnected and complex network of trust.

Garry Jacobs,
Multiplying Money

There is an urgent need for formulation of an integrated theory of employment to explain the process by which jobs are created and to explain the contributing role of political, social, technological and economic factors in that process.

Mirjana Radović-Marković,
An Aging Workforce

When the will of the majority of the world's peoples is clearly expressed in an international treaty, even if the treaty functions imperfectly, the question of legality is clear.

John Scales Avery,
The Arms Trade Treaty Opens New Possibilities at the UN

The potential for greater individual initiative (is) key to solving the mounting global challenges over the next 15-20 years.

Michael Marien,
Book Reviews

Human capital is the most precious of all resources, a resource of virtually unlimited creative potential.

Ivo Šlaus & Garry Jacobs,
In Search of a New Paradigm for Global Development

Sustainable development has essentially to do with a reconceptualisation of macro-economics. And it is within this context that the ongoing demographic revolution should be considered, as it represents probably the most challenging social issue for our world in the immediate decades ahead.

Orio Giarini,
The Demographic Revolution: Reconceptualizing
Macroeconomics

Smaller national and regional trading networks have a much smaller range of wealth, so globalisation has made the rich richer simply because of the larger scale of the trading network.

Peter Johnston, Networks: Innovation, Growth & Sustainable
Development

The really confining limits are not material or technological, but conceptual. The real barriers are the limits imposed by prevailing ideas and values. We are unwitting and unknowing prisoners of our own conceptions.

Ivo Šlaus, Orio Giarini & Garry Jacobs,
Human Centered Development Perspective

There should be a recognition of a global commitment to a right to development with an explicit emphasis on the development of human and social capital as the true repository and generator of human values on a global scale.

Winston Nagan,
The Right to Development

Economic systems do not arise in a vacuum. They are influenced by, and in turn influence, the larger social system in which they are embedded.

Riane Eisler,
Building a Caring Economy & Society

Economics would like to see itself as a natural science (physics, preferably) being applied to society, and thereby assume that human consciousness and intention play no role in the events that are observed and measured in the social context.

Gerald Gutenschwager,
From Epicurus to Maslow

Continued . . .