



PROMOTING LEADERSHIP IN THOUGHT
THAT LEADS TO ACTION

THE WEALTH OF NATIONS REVISITED

CADMUS

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CADMUS VISION

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

In recent centuries the world has been propelled by the battle cry of revolutionary ideas — freedom, equality, fraternity, universal education, workers of the world unite. Past revolutions have always brought vast upheaval and destruction in their wake, tumultuous and violent change that has torn societies asunder and precipitated devastating wars. Today the world needs evolutionary ideas that can spur our collective progress without the wake of destructive violence that threatens to undermine the huge but fragile political, social, financial and ecological infrastructures on which we depend and strive to build a better world.

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

The founders of WAAS were motivated by a deep emotional commitment and sense of responsibility to work for the betterment of all humankind. Their overriding conviction was on the need for a united global effort to control the forces of science and technology and govern the peaceful evolution of human society. Inhibiting conditions limited their ability to translate these powerful motives into action, but they still retain their original power for realization. Today circumstances are more conducive, the international environment is more developed. No single organization can by itself harness the motive force needed to change the world, but a group of like-minded organizations founded with such powerful intentions can become a magnet and focal point to project creative ideas that possess the inherent dynamism for self-fulfillment.

The Editorial Board

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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.

Open Access Policy

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Inside this Issue

In moments of crisis, all thoughts are preoccupied with immediate remedies to meet urgent needs, rather than reflection on root causes and ultimate solutions. Yet history suggests that it is only when we are under supreme duress that we are willing to put all the cards on the table and consider the comprehensive and fundamental changes needed to effect permanent solutions. Thus, it required the dire circumstances of the Great Crash and the Great Depression to give birth to the New Deal reforms in America 75 years ago, which ushered in decades of financial stability, full employment and unprecedented prosperity. It required the destruction wrought by nationalist ambitions in two world wars to give birth to the UN system – faulty, no doubt, but sufficient to prevent a repetition of global war since 1945.

The current international crises in finance, employment, ecology, and nuclear weapons proliferation are clear indications that existing structures and policies for global governance are no longer sufficient. Old bargains have to be renegotiated on a more sound and equitable basis. The organs of international governance need to be democratized. “World in 2052” and “The Turn Towards Unity” examine the process of converting these global crises into unprecedented opportunities. Economic policy must tame the Wild West of financial speculation and compel market mechanisms to generate full employment and promote human welfare. The yawning gap between the real world and the discipline of economics has never been wider. “Rethinking Economics” and “Real Economies” point to fundamental changes in conception and values on which new economic theory needs to be founded.

While governments occupy themselves with short term bailouts, this is the time when original thinking is needed on long term solutions. Those solutions are most likely to be found in the evolutionary trends that have led to our highest present accomplishments. This issue of Cadmus begins with several short Seed Ideas highlighting new perspectives and untapped opportunities, a feature of the journal which we hope will become increasingly prominent in future issues. Society constitutes an invisible web of relationships. Its organized part is always complemented by an unorganized vastness which is largely unperceived but seething with potential. The organized portion is creative of structured social forces, wealth, knowledge and power. The crises we face today are the result of the failure of our global political and economic organizations to evolve with the needs of our times. “Organization Abolishes Scarcity”, “International Food Security” and “Brief History of ADR in the US” illustrate some of the many ways in which that organization can be extended and elevated to promote human welfare. Beyond the organized society lies an unorganized expanse from which unrealized potential continuously emerges. The perception of limits is always confined to the organized society. “Boundless Frontiers of Untold Wealth” explores the unimagined opportunity that lies beyond the veil.

These are times of greatest uncertainty about the future and uncertainty has always been regarded as the bane of human security. “Evolution of Wealth and Human Security: The Paradox of Uncertainty and Values” discloses the flip side of uncertainty, which is the source of untold creativity and wealth. Realizing this potential requires a change in perspective, a shift in values from the quest for immutable, natural economic laws governing the blind pursuit of money and monetarized growth to a focus on the intrinsic value and creative

potential of human beings in quest for ever-expanding security, welfare and well-being – the real wealth of nations – that all humanity aspires for. It requires, too, the development of appropriate measures consistent with this shift in values and perspective. When growth focuses on people rather than things, the limits to growth give way to limitless growth.

Values are not merely utopian ideals or ethical principles. They represent the quintessence of humanity's past experience, the collective wisdom gathered through the ages. Values are the principles on which all lasting human accomplishment is founded. The achievements of the last two centuries are consequences of the growing realization of freedom in human affairs. But freedom has resulted in rising levels of inequality and deprivation for others, which now threatens the stability and security of the social fabric. "The Moral Arc of History" traces the evolution of values and suggests we are on the cusp of revolutionary transition.

Rising expectations are the principal driving force for social development. However, the faster and higher aspirations rise, the greater the gap between expectations and reality. That gap promotes a sense of frustration, deprivation and aggression leading to social unrest and violence. The opposite is also true: rising economic opportunity can mitigate or eliminate social unrest. "Rising Expectations, Social Unrest and Development" examines the potential of economic strategies to reduce social tensions and enhance social cohesion. "Mediation of Conflicts by Civil Society" explores the factors responsible for the remarkable decline in armed conflicts since the end of the Cold War and the role of civil society in peace-building activities. The relationship between the individual and the collective is crucial to social development. "In Search of Failure's Silver Lining" explores ways in which prevailing social values and attitudes limit innovation and creativity.

This issue also introduces a new Books section containing a review of recent books on Global Governance as well as several reviews of recent publications on Green Growth.

We invite you to post your own Seed Ideas at www.seed-ideas.org.

Ivo Šlaus, Chairman

Garry Jacobs, Managing Editor

Orio Giarini, Editor-in-Chief

SEED-IDEAS

Organization Abolishes Scarcity

Society is an intricately complex web of mutually beneficial, productive and collaborative relationships between people, activities, institutions, laws, ideas and values. Ideas and values determine the breadth, depth and heights of civilization and culture to which society attains. Organization constitutes the warp and woof of that web and determines its strength, quality, amplitude and capacity for accomplishment.

The progressive development of organization is the means for the continuous evolution of civilization. Organization permeates all fields of human existence and exists at multiple levels. The emergence and development of language, military, agriculture, markets, cities, government, money, nation states, industrialization, technology, education, and internet are important landmarks in the evolution of social organization.

Organization eliminates scarcity. In 1943 Bengal was struck by the last great famine in modern Indian history, in which two to three million people died. The cause was initially attributed to a massive crop failure and resultant food shortages. Amartya Sen found that food availability was actually slightly higher than previous years, but that hoarding and price factors were responsible. The British inquiry commission highlighted the absence of a single coordinating authority. The crisis abated when the British administration and military organized a massive mobilization of food grains from other parts of India and overseas and distributed more than 100 million free meals. Organization eliminated the scarcity.

Organization generates surplus. Higher levels of organization are capable of coordinating a wider and more complex array of activities, resulting in higher productivity and greater abundance. The remarkable achievements of India's Green Revolution were the result of multidimensional coordination of activities related to food production, distribution and consumption, including breeding and production of high yielding varieties, production of fertilizers, expansion of warehousing facilities, and coordination of research among all the national agricultural research labs. But two other strategies were of paramount importance. The first was the introduction of a guaranteed minimum floor price for foodgrain. The second was establishment of the Food Corporation of India to purchase surpluses and distribute them to food deficit areas, bypassing speculative middlemen. Together they provided farmers with an assured market and psychological incentive to maximize production. This comprehensive strategy enabled perennially food-deficit India to raise food production by 50% and achieve food self-sufficiency in five years. Within a decade food production had doubled and the country was exporting surpluses. That surplus also became the foundation for the expansion of manufacturing, marking the real beginning of India's industrial revolution in the 1970s.

Integrated organization converts problems into opportunities. The foregoing are examples of coordination focused on a single or related group of activities. But the power of organization extends still further until it has integrated virtually all aspects of social existence. Money is

a striking example of integrated social organization. Originally intended as a medium for the exchange of goods, it has evolved into a store and measure of comparative value; and acquired the capacity to convert any type of social value into any other type, thus evolving as the ultimate symbol and instrument of economic, political and social power. With money a person can procure any product or service, obtain any type of information or technological capability, travel around the world or into outer space, gain access to the highest centers of political power or get elected to public office, hobnob with the social elite or become one of them.

Micro-credit is an innovative organization first introduced by Accion and Grameen Bank in 1978 as a means to extend the power of money to the poor in developing countries who fall beyond the radar of traditional commercial banking institutions. Its success results from the effort to integrate banking with the livelihood opportunities and social structure of the poor. Since then, this organization has spread globally and grown exponentially. An estimated 10,000 micro-finance institutions now reach about 150 million people globally, three-fourths of them women. Yet despite this remarkable performance, the untapped potential is estimated to be more than three times greater than the present coverage. In India only about 5% of the 350 million people living below the poverty line have access to micro-finance.

Integration is a concept more frequently used than understood. The performance of a symphonic orchestra is coordinated by the conductor, but not integrated. Individual musicians do not have the power to compensate for errors of rhythm or meter by their colleagues. In contrast, the performance of the human body is so fully integrated that each cell, organ and system has the capacity to respond to local stimuli, to compensate for changes in the functioning of other parts of the body, and to also accept instructions from the central nervous system. Integration converts a mechanical organization into a living organism.

The Internet is the first globally integrated social organization, extending beyond the monetarized sectors of the economy to encompass our most intimate personal interests and global human aspirations. Spanning the earth, it masters space by bringing the most distant corners of the planet within reach. Moving at the speed of light, it masters time by acting instantaneously across the world. Today the internet makes it possible for more than a billion people to accomplish from their own homes and offices, feats unimaginable even for large corporations and national governments a few decades ago. It makes available at our fingertips in an instant knowledge previously denied to all but a rare few by years of arduous labor. It makes possible instantaneous exchange of ideas and information and collaborative endeavors involving huge numbers of people. It levels the playing field between infinitesimal individuals and mega institutions. It can empower the ordinary citizen to topple an authoritarian regime or release a global movement to fashion a better world.

The productive powers of society can never be exhausted. The more they grow, the more capacity they acquire. Organization fully utilizes the available energies and releases fresh expansive and creative energies, the way scientific societies stimulated the development of science in recent centuries. The creative powers of society have the capacity to elevate productivity into creativity, the way the Internet is now changing how the world's work is accomplished.

If organization is so very powerful, why does humanity still suffer today from seemingly insoluble problems of poverty, unemployment, social unrest, terrorism, nuclear proliferation

and climate change? These problems can best be understood as expressions of incomplete, fragmentary and inadequate organization. They cannot be effectively addressed by partial, piecemeal strategies. The world is evolving and our social organizations have not kept pace with the demands for globally integrated solutions. The broadening of the base of human activities from the national to the global level necessarily compels a commensurate reorganization at the global level and all the levels below it. Mere coordination of activity between points in space can never be optimal, any more than the states of the USA or the millions of nodes on the Internet could function effectively through bilateral and multilateral arrangements.

Governor of the Bank of England, Mervyn King, stated in October 2010, “Of all the many ways of organising banking, the worst is the one we have today.” Finance has become divorced from mainstream economics. Trillions of dollars circle the globe daily in search of higher speculative returns, denying the capital needed by the real economy. Economics and finance must be reintegrated for productive purposes. Rising levels of income inequality aggravate the shift of capital from production into speculation. Improved communication systems make the impoverished far more conscious of the life styles of the growing middle class, raising their expectations and frustration to the point where it spills over into social unrest, violence and terrorism. A nation-centered, competitive security system encourages militarization and nuclear proliferation, thereby increasing the insecurity it was intended to reduce and doing so at a cost many times greater than what would be required by an effective global cooperative security system.

So too, ecological problems can best be understood as the result of a misguided organization of the world’s natural resources and productive capacities driven by the wrong values, ideas and priorities. Unidimensional technological solutions will never suffice. Regardless of the technology employed, growth for growth’s sake divorced from human welfare can only deplete and destroy the environment. It is not unlimited growth the world needs, but unlimited human development. Rightly organized, the world is abundantly capable of securing an ample measure of human welfare to all human beings.

Unemployment resulting from an increasingly globalized labor market continues to be viewed and addressed by fragmentary national level policy instruments – tax cuts for the wealthy, monetary policies, macro stimulus packages – which never address root causes. It is aggravated by financial instability arising from the channeling of resources into non-productive speculation. Even unidimensional coordination of education and employment to meet skill shortages and promote self-employment and entrepreneurship would be sufficient to dramatically reduce unemployment in most industrialized nations. A coordinated global employment strategy to match emerging opportunities with human capabilities would eliminate it completely. An integrated strategy relating employment to education, complementary global markets, the untapped potentials of the Internet, financial regulation, demographic trends and other factors can generate an abundant, perennial source of new employment opportunities for all job seekers.

The crises we face expose our blind spots and failure to evolve with the need of the times. Each conceals a potential for converting scarcity into surplus, conflict into cooperation, wastefulness into more for all, growing threats into greater security. Individuals and organizations that are able to think freshly and act creatively will be the catalysts able to

envision further levels of organizational development and integration needed to convert crises into opportunities. The individual is a miniature of the society, integrating within his own personality personal and collective aspirations and transcendent values. The individual who can think freshly and act creatively is the catalyst for social evolution.

The articles in this issue of *Cadmus* point out organizational insufficiencies and organizational opportunities that can convert these global challenges into creative opportunities for humanity. The power of organization to ensure global food security is discussed in the next *Seed Idea*. In the modern service economy, the production of wealth (and economic value) is increasingly related - and almost totally dependent on the evolution of more complex and integrated organizations for delivery of social services. Roberto Peccei calls for a reformulation of economics based on the conception of a single global economy which integrates economic and ecological factors to maximize employment generation and human welfare. Mike McManus' article on mediation and arbitration illustrates one of the many untapped potentials for extending simple mechanisms to improve governance. Ashok Natarajan's article on rising expectations proposes economic strategies to address social unrest and terrorism.

Editors

Notes

1. Mervyn King, "Banking: From Bagehot to Basel, and Back Again", The Second Bagehot Lecture, Buttonwood Gathering, New York City, October 25, 2010 <http://www.bankofengland.co.uk/publications/speeches/2010/speech455.pdf>.

Organizing International Food Security

At the time of this writing, more than 10 million lives are at risk on the Horn of Africa due to food shortages arising from poor rainfall and a consequently dismal harvest. But the source of their food insecurity in the region is also related to conflict, environment, education, governance, health and other issues. Famine has reoccurred in spite of a doubling of development aid and tripling of humanitarian aid over the past decade. In this day and age, is global food insecurity really unavoidable?

During the 19th Century waves of immigrants flocked to America for refuge from war, political oppression, religious persecution, and famine. They came seeking freedom of action, the opportunity to acquire land and employment, and the sense of security engendered by a new continent's boundless natural riches and booming economy. Over the last 100 years, the dream of freedom, opportunity and security has circled the globe and ignited the aspirations of people everywhere. Soaring expectations have driven ever higher the standards by which humanity assesses its rights, opportunities and secures possessions. The measures by which the social collective conceives its responsibilities to individual citizens have risen correspondingly.

This relentless quest continues today as legal and illegal migration of the skilled and unskilled across international boundaries and in the magnetic attraction of rural families to urban life. It is a compelling force for the spread of democracy and the accelerated development of productive capacities around the world. Where it has been too violently suppressed or given insufficient scope for expression, the resulting frustration is a catalyst for violence and revolution. Peace, opportunities for gainful employment, and food security are the key variables in the formula for social stability and prosperity. Whether by a revolutionary individual effort or an evolutionary general progress, the process continues undeterred.

The quest for food security springs from this movement. During the age of Malthus, hunger was conceived primarily as a problem of insufficient food production. While the world's population has increased nearly six-fold during the past two centuries, the capacity to produce food has grown even faster. During the last half century world food production has tripled. Today the world possesses the capacity to produce more than sufficient food to feed its burgeoning population. But mere production of more food is not sufficient to eradicate hunger. In most countries access to gainful employment is now the single greatest challenge to achieving food security. Even in the most prosperous nations, employment opportunities and income security are subject to market forces and cannot be considered a source of absolute security. Unless the right to food is legally enshrined and enforced, the specter of insecurity will remain. This realization has prompted the Government of India to introduce unprecedented legislation to guarantee access to gainful employment for the poorest sections of the population that are most susceptible to hunger. The country is now in the process of introducing a national food security act to assure both economic and social access to adequate food for all persons in the country at all times.

The Tsunami that devastated South Asia in 2004 leaving five million homeless and three million without food illustrates the challenge. In a heartbeat fertile farm lands were washed

away in the flood. Entire fishing villages that had been producers of food for other families were suddenly bereft of the capacity to feed themselves. The inability of society to mobilize and distribute sufficient food during times of national calamity can deprive even the relatively well-to-do of true food security.

There is a great distance between granting individuals freedom to exercise their own capacities, creating opportunities for them to fulfill their aspirations, and ensuring them the means to securely possess and enjoy what they have thus acquired. Freedom implies a permissive atmosphere supported by laws and an organized capacity for enforcement. Opportunity implies an expansive and creative environment supported by an efficient organization of productive activities. Security implies protection of that which has been acquired supported by an organization for emergency relief in the face of any contingency.

True food security is not just a state of capacity for production or economy where-with-all to purchase. It is in essence a psychological state of confidence in which the very possibility of deprivation has been removed. Such a state is difficult to conceive in the world today, but that does not mean it is unachievable. There is a certain irony in the fact that most societies compel their citizens to become educated while still leaving them largely responsible for fulfilling more basic human needs such as food, housing and employment, without which the capacity to acquire education, indeed even to survive, is placed in question.

This evolutionary advance, while highly commendable on humanitarian grounds, has been propelled by the practical consideration that the greater the number attaining rights and benefits, the stronger, more resilient and successful the society becomes. The converse principle, as illustrated by the Great Crash of 1929, is that the unwillingness or failure to push benefits down obstructs and ultimately destroys the potential for greater advancement among those at the top. The same principle that has led governments to ensure bank deposits against the errors and malpractices of bankers compels us to extend the security umbrella to encompass all the most precious achievements of modern society.

Nor can any country safely confine its interest to within its own borders. In today's world, violence, hunger, unemployment, disease and pollution know no boundaries. Unemployment begets hunger and hunger begets violence that can spill over and touch the lives of people anywhere. Of the 100 plus new conflicts that have broken out around the world since the end of the Cold War, most are concentrated in regions heavily dependent on agriculture. Very few have occurred in food-secure environments, but their consequences threaten security throughout the world. No one can be fully secure unless and until everyone has obtained a modicum of security, both physically and psychologically.

Organization holds the key to global food security. The present, unorganized functioning of global agriculture, like the present global approach to military security, engenders insecurity and generates new threats by the very act of trying to eliminate existing ones. Nations today live in a competitive security system, wherein each nation is largely responsible for its own defense and the very act of strengthening its capacity for defense increases the real or perceived threats and insecurity of other nations. Similarly, the competitive food security system results in wasteful overproduction, unremunerative prices and unsustainable subsidies. A cooperative security system would be one that by including all nations would eliminate potential threats to all its members at the lowest possible cost.

A cooperative organization for food security needs to be put in place at all levels – local, national and international. It is only through such a mechanism as an international food corporation that the huge overproduction of food crops within and between countries that results in collapsing market prices, farmer bankruptcies and huge subsidies can be avoided. It is only through better organization internationally that the need for maintaining costly national buffer stocks can be minimized through creation of an international buffer stock and food security system. It is only through improved organization that the huge waste of food due to poor storage and handling – estimated at 20 percent of agricultural GDP in India – can be eliminated. As the international organization of credit card transactions—involved thousands of banks, millions of companies, hundreds of millions of individual users, and trillion dollars of business—provides accurate and instantaneous exchange of information on credit transactions, an international food organization would have to provide accurate, up-to-the-minute information on supply and demand for food worldwide together with a foolproof system for rapid transfer of resources wherever and whenever they are required.

An international organization for food security will not eliminate healthy competition. Indeed, it will foster it. In the case of bank credit cards, organizations such as Visa International both promote and secure cooperative competition among thousands of banks, while minimizing the risks to all parties. But it will provide all players with access to the essential information required to make intelligent decisions regarding what and how much food to produce to meet projected demand nationally and globally. It will substantially reduce the risks of agriculture as a business, thereby encouraging banks and insurance companies to extend the credit and insurance coverage needed to protect producers, while ensuring stable supplies and prices for consumers. An effective organization for food security will necessarily require the opening of markets and elimination of export subsidies by industrialized nations.

Global food security requires the capacity to produce a physical abundance of food; the capacity to create a responsive organization to link production, distribution and consumption; the capacity to create an integrated communications network for information and transactions; and the capacity for legal enforcement. The world possesses all these capacities at the present moment. But to achieve world food security, they must be founded on and driven by the global recognition of food security as a fundamental and inviolable human right and the enshrinement of that right in law and treaty.

The world community possesses the technological, financial, organizational and human capabilities required to eradicate world hunger and assure a modicum of real food security to its entire population within a decade. It is not a matter of charity or aid. As in the case of universal education, it is a question of ensuring to all citizens the essential requirements for self-reliance and self-development. It requires a shift in emphasis from managing food to developing human beings. It requires the will and determination to accelerate the natural progression of human development that has so dramatically enhanced human security for so many over the past 50 years and must inevitably tackle this issue which is so essential to the future peace and stability of the whole world.

Editors

Boundless Frontiers of Untold Wealth

Society constitutes an invisible web of relationships between its members. It has a defined structure of authority, status, rights, knowledge, beliefs, values, laws, specialized institutions, functional systems and formal activities radiating down and out from centers of power to the periphery. Beyond the perceptible limits lies an amorphous unknown territory akin to the undiscovered New World which Columbus encountered on his first voyage in search of untold wealth through an unchartered passage to India. The organized part of society is always complemented by an unorganized vastness which is largely unperceived but seething with potential. The organized portion is creative of structured social forces, wealth, power and knowledge, symbols and symbolic power. Beyond that lies an unorganized expanse from which unrealized potential continuously emerges. The perception of limits is always confined to the organized society, a boundless finite encompassed and embraced by a boundless infinity of unimagined opportunity.

Before the advent of agriculture, food gathering was thought to be entirely dependent on the natural productivity of nature, and wandering tribes had to migrate periodically to wherever food was most abundant. Society was organized for food gathering and hunting to draw upon Nature's limited reserves. The life of hunter-gatherer communities possessed an organized structure, hierarchy, division of labor, distribution of authority, knowledge - symbols of status and wealth. These structures enabled them to survive under the stressful and unpredictable conditions of physical nature. Little did they imagine the untapped potential which their descendants would unearth by systematically imitating nature's method. The organization of agriculture gave humanity the power to produce food in excess and the attendant leisure for thought and recreation. Constant migration was replaced by settled communities of cultivators. Surplus production gave rise to market towns and eventually to cities where education, entertainment, arts and culture flourished.

The untapped potential of unorganized social forces is always vastly greater than the present organized social reality, for it grows unperceived with each advance in the organized portion. The invention of barter trade provided an incentive for every producer to maximize production, but the subsequent invention of markets, money, credit, banking, Hindu numerals, double-entry bookkeeping, bills of exchange, stock and commodity exchanges multiplied the potential for trade exponentially by a function resembling Moore's Law. Society's view of possibilities is always confined to the existing structure. The rest is left to the imagination of the visionary.

In Adam Smith's day the prosperity of nations depended on the number and skill of their productive manual workers. James Watt's much improved steam engine, patented in the same year Smith published *Wealth of Nations*, had not yet announced the onset of the Industrial Revolution. A century later Edison and Tesla inaugurated the Age of Electricity. The discovery of the integrated circuit in 1959 ushered in the Electronic Age we live in today. In recent years Moore's Law of doubling has doubled. Beyond still lies the unlimited potential for harnessing this ever expanding computational capacity by more subtle and powerful software. Each stage in this progression represents a radical transformation of our conception of realizable potential and our capacity for practical accomplishment.

The visionary is almost always a rebel, an outcast, a member of the unorganized fringe, rejected or ignored by mainstream society. At a time when America was regarded as an uncivilized refuge for the unwanted and unfit, Smith predicted that within a century these impoverished immigrants operating in an atmosphere of unmitigated freedom would create the most prosperous nation in the world. It was not the behemoths of corporate America that discovered and tapped the potential of the personal computer, but college drop-outs like Steve Jobs and Bill Gates tinkering with electronics in the garage.

About thirty years ago a profound original thinker in economics recognized this truth about society. He perceived the potential of the unchartered territory beyond the monetarized economy and the continuous interchange it conducted with the unmonetarized aspects of our lives. Long before its commercial potential was evident, his thought revealed how a free natural resource like drinking water could grow into a global market valued in excess of \$60 billion and the global market for education could exceed \$2 trillion.*^{1,2}

With even greater insight, he perceived the incalculable latent potential of uncertainty. Inspired by the discoveries of quantum theory and long experience in the insurance industry, he realized that uncertainty was the fundamental principle of the modern service economy. Discarding the premise of fixed laws and equilibrium equations which economics had borrowed from Newtonian physics and clung to long after physicists had moved on to a relativistic, quantum view of reality, he saw that uncertainty is the basic condition in which economic value is created. Rather than regarding it as a measure of temporary ignorance which could be overcome by greater knowledge, he perceived that uncertainty is an inherent property of life and the potential source of unlimited wealth. His vision compelled him to challenge the very conception of limits, for he saw that the structures on which our modern economy is based – education, technology, organization, ideas, values – admit of infinite extension in realms that lie beyond our perception in the unchartered waters of the future. Uncertainty has no limits. The more we learn, the more there is to learn. The more we organize, the more there is to organize. The more we realize, the more there is to realize. The only limit is the belief in limits.

The force of his argument, as well as the power of this phenomenon, has become far more evident and perceptible since the advent of computers and the Internet, but the principle has always been true. The development of education is illustrative. Education evolved as a system of personal instruction in ancient India and Greece, which was constrained by limits to the knowledge that society could pass down orally or in handwritten manuscripts from one generation to the next. The advent of the printing press, scientific societies and government-sponsored public education in recent centuries extended the scope for education from the privileged few to the entire society. The USA, which awarded just one PhD in 1870, now confers about 50,000 annually. Since then the scarcest and costliest of all commodities – knowledge – became the most abundant, and even free. The spread of education in turn has created the foundation for unimagined developments in science, law, administration, invention, business, banking, transport, communication, energy, sports, entertainment, community, family, collective welfare and individual well-being. All these potentials for civilized living have emerged from an unperceived creative caldron of human social potential that lies beyond the structured bounds of society.

* Data from the Beverage Marketing Corporation

The frontiers of global education are rolling back rapidly to reveal vast opportunities that have yet to be organized. In five short years a single individual, Salman Khan, has demonstrated how much further the limits may be extended in future by creating 2400 educational videos and delivering 75 million free lessons over the internet. According to UNESCO estimates, global enrollment in universities rose from 500,000 in 1900 to around 100 million in 2000. Raising global participation rates in higher education to the level prevalent in the U.S. would require the establishment of hundreds of thousands of new colleges and universities and the training of millions of qualified instructors. For India to raise participation rates to the current U.S. level through traditional means, the number of college students would have to rise from 14 million to 81 million, which would require creation of a few thousand new universities and about 100,000 new colleges. Obviously the solution does not lie in the traditional structure of brick and mortar universities, but in the unexplored hinterland of the global virtual classroom.³

The visible limits are giving way in many other fields as well. An upstart start-up appropriately named Amazon is transforming the book business from a local into a global virtual marketplace, converting the book itself from a physical object produced by costly labor and precious raw materials into a virtual object that can be reproduced and distributed infinitely at no marginal cost, and breaking the cartel on book publishing to enable individual authors anywhere to publish and distribute their own works everywhere at negligible cost. Similarly, e-Bay has transformed the marketplace, creating a new market structure which enables any individual to become a global retailer, and Wikipedia has devised a means to gather, organize and distribute the collective knowledge of all humanity. These along with Google, Apple and many others are only the most recent and dramatic instances of an age-old process of materializing opportunity out of unstructured uncertainty. Technology may provide the foundation, but it is innovations in social organization that are creating new structures to reach out into previously uncharted territories of creative potential.

What is now happening in education occurred with regard to money long ago and the process is still unfolding. Early forms of money were rare or valuable objects, including a variety of commodities and precious metals. About a thousand years ago money evolved from an object to a form of credit, a promise to pay later for a present exchange based on trust. Centuries later banks began to issue their own deposit receipts which became a convenient form of money based on confidence in the financial soundness of the institution. Governments also learned that they could create different forms of money based on trust in their ability to generate revenues and repay obligations at a future date. Eventually confidence in government-backed financial instruments became so strong that government issued currency and bonds backed by faith in the government and the nation it represented became the principal form of money. The spread of unsecured credit card loans is a form of money backed by confidence in the individual card holder's ability and willingness to repay sometime in future. And the process goes on as new forms of money are created, thereby giving present monetary value to intangible assets and future capabilities.

While the emerging nations are teething with energy and boundless opportunities in their quest to emulate more economically advanced countries, the most prosperous nations look into a future that appears bound by severe constraints – demographic, economic, ecological, financial, and political. In truth, the only constraints are perceptual. The only limits are limits to our vision and values. The future of humanity lies beyond those limits.

The creative potential of uncertainty and the unmonetarized economy are most dramatically illustrated by the emergence of the modern service sector, which now accounts for 64% of global output and 70% of employment in OECD countries. At the time Adam Smith wrote his treatise on wealth, most service activities were so economically insignificant that he did not even consider them as part of economics. In the USA, education and healthcare now account for 13% of GDP, business services 14%, financial services 9%, information, arts & entertainment 8%.⁴ Nobel laureate Sir Arthur Lewis viewed industrialization as an emergent property of agricultural surpluses in 19th century England. Similarly, the modern service economy is an emergent property of manufacturing. Industrialization and rising levels of income inevitably give rise to new needs and new opportunities. What next? Physical needs and resources may be limited, but the potential for services is not. The field of services is not land or factory. It is human relationships. Human needs and resources are social and psychological and not subject to any inherent limits.

Once again we approach the boundaries of the finite and struggle to see or imagine what lies over the edge. As European sailors seeking a route to India once feared to venture beyond Cape Bojador midway down the Western coast of Africa for fear of falling off the end of the earth, now too our incapacity to see beyond the present lends the impression that we are at the edge of the earth with no further room to advance. This territory beyond the veil is explored from an original perspective in Orio Giarini's article "Evolution of Wealth and Human Security."

Editors

Notes

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A Mediterranean - EU Community for a New Era of Mankind

Appeal

And suddenly everything is different! With the Arab Spring we are entering into a new era while the European Union itself is facing huge challenges. This is the time to innovate! Diplomacy, economy and society have to be rethought to respond to the aspirations towards a new development model, the strengthening of the rule of law, and the establishment of a new framework for integrating regional economies. In addition to the differentiated approach the European Commission is proposing that the ‘Partnership for Democracy and Shared Prosperity’ open to all Mediterranean Countries, and that a ‘Mediterranean-EU Community (MED-EU)’, limited to countries having embraced real democracy and a peace agenda, should be launched.

Indeed, the visionary response to the Arab Spring should be the building up of ‘Institutions’ to take initiatives leading to peace and prosperity at the regional level, secure the enforcement of the rule of law, and protect citizens. We call for a Mediterranean-EU Community which would have a High Authority (three men and three women), a Senate directly elected by the citizens and a Council of Ministers while the European Union would keep its European Council, its Commission and its European Parliament.

A specific Court of Justice of MED-EU would be established in Strasburg next to and working with the European Union and Council of Europe Courts of Justice. MED-EU would have mediators in the field of armed conflict, water management, human rights and association rights. Non-Mediterranean countries would be welcome as observers.

MED-EU would be a community of countries of the Mediterranean Region with the European Union acting on behalf of its members. Members of MED-EU would be committed to peace, democracy, human rights and sustainable development.

MED-EU would have four ‘baskets’ to address : (i) Peace and Human Rights, access to information, right to expression, participation and justice (ii) Green Economy, water, energy, food, green and connected cities (iii) Integrated Economic Region (iv) Youth.

MED-EU would have its headquarters in Istanbul (the High Authority), Tunis (the Senate) and Strasburg (the Court of Justice) while the EU would keep its headquarters in Brussels, Luxemburg and Strasburg. MED-EU isn’t an alternative to the EU accession process addressed to the Balkan countries and Turkey.

Observing that all the previous efforts to design initiatives at the Mediterranean level failed for the same reason, the MED-EU founding declaration would state that “Israel and Palestine have vocation to join the Mediterranean-EU Community and Jerusalem should become the Capital of the Community once both Israel and Palestine reach a peaceful agreement, secured democracy and security”.

A Diplomatic Conference of the Countries bordering the Mediterranean Sea, the Arab League, the African Union and the EU with participation of Russia, the United States, China and Japan should design new institutions for the Community. This Conference should be prepared by:

- a Civil Society Congress to shape a roadmap for each basket
- a Financial Conference to get the public and private financial institutions, including Sovereign Funds, to agree on the financial support to a Marshall Plan in support of the implementation of the baskets.

The Mediterraneans as well as the Europeans and Mankind as a whole, are in front of a 'great transition' and a 'transformation agenda' for several reasons from a political, economic and ecological point of view.

With a Euro-Mediterranean Community, Mediterraneans and Europeans have again the chance to lead the 'great global transition' by example, building a new 'community of values and rights' beyond cultural diversity, to secure prosperity for all and move gradually and peacefully to a new era of mankind.

Virgilio Dastoli, Secretary, Italian Council of the European Movement (C.I.M.E.)

Raymond Van Ermen, Director of European Partners for Environment

The World in 2052

Ian Johnson

Secretary General, Club of Rome

Humanity has made immense progress over the last few decades. The starting point for setting a future's agenda can be anchored in a healthier, better educated, more prosperous, and better informed and connected world than ever.

Humanity finds itself at an evolutionary crossroad. The choice is between a perfect storm of progressively deepening crises and expanding perspectives of unprecedented opportunities.

Viewed from the perspective of the past, the current crises predict a gloomy future. Viewed as an evolutionary opportunity to break with outmoded ideas, values and institutions, they provide the essential conditions for the rapid transition to a more peaceful, prosperous, equitable and sustainable future.

The recent failure of collective action to address international financial instability, climate change, unemployment and food insecurity seems to justify pessimism. But this failure has been the result of a piecemeal, fragmentary approach to both understanding and addressing the issues.

The root causes of the crises we are witnessing rest on outmoded theoretical concepts, values and institutions. The remedy lies in the formulation of a new theory appropriate to the radically different conditions of the 21st century, commitment to progressive values that integrate individual freedom and equitable cooperation to maximize the welfare and well-being of all, and establishment of more effective national and global institutions.

There is a growing understanding and an increasing consensus of the kind of world we want to live in. A global society which has moved beyond hunger and suppression, a world that manages to live off the resources which the finite planet and the infinite human ingenuity provide, an equitable society which lives sustainably and is a lot better off and happier than today. The vision of the Club of Rome is one of an enlightened world guided by values of cooperation.

The world in 2052 can be a much safer and resilient place than it is today. Humanity has the opportunities, the tools, the science, technology and the insight to overcome the systemic crisis and to move into a better world. Whether we manage to do so will depend on each one of us.

1. Global Limits, a Systemic Crisis and its root causes

In 1972, the Club of Rome published its first report, *The Limits to Growth*. The report warned that if growth rates seen between 1900 and 1972 were to continue, humanity would overstep planetary boundaries sometime between 2000 and 2100. 40 years later, there is no doubt that the world has been crossing and continues to cross planetary limits. The consequence is a series of crises faced by our global society.

Within the first decade of this Millennium, humanity already finds itself in at least five major ecological and social crises. Each of them is a warning sign, that something is going wrong: An unemployment crisis, a food crisis, a global financial crisis, an economic crisis and a global ecological crisis.

These individual crises are, in fact, driven by many of the same root causes: Values not aligned with the crises we are facing and an antiquated belief system, an outdated economy, outdated institutions and inadequate delivery mechanisms.

2. An Emerging Movement and Opportunities as never seen before

We are faced with the necessity to evolve towards new and higher social systems that are needed to effectively manage higher levels of technological capability, globalization of society, greater human mobility, etc. We should not focus on what seems to have been lost, but on what humanity has until now never possessed. Society is evolving. Understanding the present in the light of the past, we see only the problems resulting in gloom. Understanding the present in the light of the future compels us to evolve, we see the opportunities it points to.

Entire sets of beliefs and behavior have become outdated and counter-productive and need to be replaced by new thinking and new approaches. The good news is that this change is effectively beginning to take place, despite the stiff resistance it faces.

A groundswell of a global movement seems to be building up as millions of people are actively engaged in building a global society, which is sustainable, just and equitable. What unites them is a vision for a better world, one where humanity lives in peace with nature and itself, a world which can be called “*sustainable and equitable*“, a world which would be much more secure, stable and habitable than the one we are living in today.

This groundswell is aided by an unprecedented array of tools and resources such as innovations in technology and communications, higher levels of education, greater democratic freedom, greater tolerance and international understanding, increasing capacity for organization and progress of all types of social institutions.

3. 2052: What will the future hold?

Over the next 40 years the world population is likely to grow from close to 7 billion to 9.5 billion people, with a corresponding increase in demand for energy, land, water and food, resulting possibly in a tripling of GDP. It is assumed that the population will level off at around 9.5 billion in 2045 – a unique era in human history.

These developments are bound to further increase humanity's footprint and to reduce resilience in natural and social systems. They even carry the potential of propelling us into an unknown world, driven by non-linear processes, largely out of human control.

We maximize our chances that, by 2052, in 40 years' time, we can look back and understand that we have succeeded in transiting into a fundamentally more sustainable, equitable and peaceful world by

- Redefining the values which effectively guide the development of society
- Developing a new economy, both in theory and practice, so that
 - ✦ natural and social capital are correctly valued
 - ✦ new financial markets deliver the goods and services mankind needs in and for a sustainable world
 - ✦ sufficient jobs are created to allow a decent income for all
- Creating appropriate governance institutions on a global, national and local level

4. Values

Values change as society develops and evolves, as its members become more conscious, informed, experienced, capable, and confident. We no longer live in a world where competitive pursuit of individual self-interest, excessive wasteful accumulation and inequitable consumption that disregards the impact on other people and societies can be sustained. Darwinian laws of the jungle are indefensible in the interconnected globalized world of the 21st century. Humanity's future prosperity will depend on our realization that universal and equitable distribution of all aspects of social capacity, opportunity and security is the most essential and effective means for promoting peace, prosperity and maximum welfare and well-being in the future.

The issue of values needs to move more prominently into the forefront of the debate on both a personal and institutional level.

5. Economy

The most essential function of any economic system is to provide sustainable livelihoods, economic security and maximum welfare to all citizens. Money, markets, production and growth are in fact merely a means to an end with no essential value other than that of meeting human needs.

The foundations for modern economics were built when the world was dramatically different from today. Current economic theory rests largely on assumptions that were made over 200 years ago but many are no longer valid for today's world. The economics of today neither appears to address the real issues of today's world nor does it measure the things that really matter to people. It is time to re-think and change our ways, to re-engineer economy, making it fit our purpose.

Our economy is based on measuring and valuing incorrectly. For a wide range of goods and services essential to the maintenance of a safe, secure and sustainable planet, the

systematic inadequate valuation (both under and over) is causing major problems, such as the degradation of ecosystems, depletion of biodiversity and the destabilization of the social fabric of families and communities. Natural and social capital need to be properly valued in economic terms. Economy has to become “*real*” and must be built on real values.

Our current economy generates inequality, which needs to be corrected through new redistributive policies. The poorest 40% of the world’s population account for only 5% of global income, while the global assets of the wealthy have multiplied exponentially, from \$12 trillion in 1980 to almost \$170 trillion in 2006. The issue of inequity lies at the heart of a sustainable, fairer and more just world.

The issue of meaningful employment might be one of the most underestimated challenges facing humanity. People need income to cover their essential needs and to be able to live a decent life. With 200 million unemployed, 1 billion underemployed, and an estimated 1.7 billion under the age of 15 it is obvious that we need an economy which produces jobs and income for the maximum number of people. If we fail to do this, we will face social unrest on an unprecedented scale.

It is the primary task of an economy to produce real and lasting welfare gains including meaningful occupation for a maximum number of people. It is now becoming evident that rising levels of unemployment are not inevitable. The root cause of unemployment is clinging to outdated values. Unemployment thrives on 19th century values of political, economic and social inequality, inequality of rights and opportunities which limit social growth. Extending economic, political and social equality is the real basis for permanently eliminating the problem.

6. Institutions and Delivery Mechanisms

6.1 Markets

Markets are an essential aspect of our life. The de-regulation of markets in almost all economic fields provided a platform that moved markets, poorly regulated at best and un-regulated at worst, towards speculation and shortly thereafter into avarice. We must re-orient our markets so that real values are reflected in decisions. Failure to correct the excesses of the past decade will decrease trust, increase social disharmony and lead to undesirable outcomes. Markets will need to play a new role in facilitating the funding and delivery of a great many services that will be required for a 2050 sustainable world including ecosystems services and carbon reduction.

7. Governance

7.1 Global Governance

The world has rapidly become a smaller place. We have also witnessed a massive rise in interconnected issues requiring management and common policies. Furthermore, each and every one of us has also become a global citizen.

The future of sustainability depends critically on how well we manage “issues without passports”. Three groups of global issues that now require our urgent attention: The rise of

“*global commons*” issues such as climate change and the loss of fisheries and ocean damage; a strong “*global conscience*” that has turned attention to world poverty, hunger and security; and a dramatic rise in establishing “*clear global rules*” that make each of our lives safer, more predictable and protected.

7.2 The Visible Hand of the Public Interest

A prosperous and stable society requires a proper balance between the role of the market to stimulate innovation and the effective use of resources and the role of government as the custodian of the common interest. Governments should provide a clear and predictable framework of law, of supervision and of regulation within which the market could operate so as to achieve a balance between private rights and benefits and the prosperity of the community. There is an urgent need to have strong regulatory mechanisms, which safeguard common public interests.

7.3 Local Communities and Individual Action

Individuals and local communities can and do make a difference. Individual commitment and behavior to a changed and better world is fundamental as it is at the individual and local community level that we will see real change. Innovation in information technologies, in energy systems and other domains has given rise to greater possibilities for local decision-making. Natural resources are often best managed by local communities. These aspects expand the range of decisions that can be made under the rule of subsidiarity.

7.4 Shaping the Future: Six Global Goals

Six global goals are essential for the transition towards a sustainable, equitable and happier world:

1. Societal values, which are essential for a sustainable and equitable society, are fully reflected in all economic decisions.
2. The economies of the world reflect the value of natural and social capital; markets operate in a fair and transparent manner and deliver the goods and services required for a sustainable society.
3. A more equitable distribution of income both within and between countries.
4. Access to meaningful work, which provides enough income to lead a decent life is guaranteed and recognized as an essential human right. Job generation has become a top priority for all investments and costs for unemployment are considered in decision-making.
5. Ecology is seen as a binding constraint for all forms of human activity and is therefore managed in a manner which reflects its biophysical and economic value. Never should the world be in overshoot.
6. Appropriate governance systems at the local, national and global level, which can manage the transition into an equitable and sustainable global world, are established.

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Rethinking Growth: The Need for a New Economics*

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For over 40 years the Club of Rome has been concerned with the sustainability of our planet. The conclusion of the famous first report to the Club of Rome *The Limits to Growth* that the world was on an unsustainable path was anticipatory and prescient.¹ Although *Limits* caused considerable debate, after an initial flurry of interest, the message of the Club of Rome was largely ignored. Only now is this message beginning to re-acquire the currency it deserves, but we have lost much time.

Today many people around the world understand that the “business as usual” path mankind is on will lead to major ecological, social and economic challenges in the future. However, very few really understand what practical steps need to be taken to avoid this predicament. It has become clear that understanding the problems humanity faces is not enough. One needs to find solutions and the will to implement them.

It is worthwhile reflecting on the reason why it is so difficult to find a solution to the predicament that mankind finds itself in. The Club of Rome and other like-minded organizations have been very good at providing a deep understanding of the reason for this predicament, which is rooted in the growth of population and of consumption in a finite world. The Club of Rome, as well as many other organizations and individuals, have also been very good at suggesting practical ways for moving towards sustainability through specific actions. In fact, the two most recent reports to the Club of Rome, *Factor 5: Transforming the Global Economy Through 80% Improvements in Resource Productivity* by Ernst von Weizsaecker et al, and *The Blue Economy* by Gunter Pauli suggest many practical ways to make the world more sustainable by increasing efficiency and relying on bio-mimicry.^{2,3}

As Ian Johnson, the Secretary General of the Club of Rome, has pointed out what has been missing on the whole in the work of the Club of Rome and that of others, is the crafting of the necessary legal and social instruments which help link the theoretical understanding of the problem with practical actions, based on a thorough analysis and extensive policy debates.⁴ This raises the question why it has been so difficult to devise these implementation mechanisms. In my view the reason is simple: it has been impossible to carry out this analytical and policy work using current economic theory because the underlying principle of this theory is economic growth.

If one believes that the central issue facing us today is that unbridled population and

* Based on talks given at the Paradiso Conference, Brussels, November 2010, the Romanian Academy of Sciences, Bucharest, March 2011, and the first joint meeting of the Latin American Associations for the Club of Rome, Buenos Aires, April 2011.

economic growth are untenable in a finite world, one must then logically develop legal and social instruments which will provide solutions to our present predicament **outside** of our present economic theory. Thus what is needed for progress to occur is a new economic theory – one where sustainability rather than growth is the central driver. Such an economic theory does not really exist!

The world needs a paradigm shift in economics similar to the one physics experienced at the dawn of the last century, when quantum mechanics and the special and general theories of relativity were invented to address new phenomena not explainable by Newtonian mechanics or Maxwell's electrodynamics.

I believe economics is ready for a similar paradigm shift. Modern economic theory was constructed on a foundation laid out by Adam Smith in his famous 1776 book *The Wealth of Nations*.⁵ Although economics has evolved in the last 200 years, many of its fundamental concepts derive from that time. This was a time of limited production capacity at the dawn of the industrial revolution where human capital was the main driver and the production of manufactured goods was synonymous with wealth creation. The nation state was the basic unit and one of Smith's tenets was that competition among nations led to economic advantage.

We live now in quite a different world- one where services rather than manufacturing accounts for the bulk of economic activity. Furthermore, the economy is now so globalized that the notion of nation state economies has lost most of its meaning. In addition, financial transactions, rather than being the means for economic activity, have become an end in itself. Given these changed circumstances, it seems obvious to me that one might want to rethink the underlying economic theory.

However, in contrast to physics a century ago, there seems to be no sense of urgency among today's economists to create a new economic theory to reflect better today's realities. A century ago, Einstein, Planck, Bohr and many other brilliant young physicists working in relative obscurity modified Newtonian physics to account for phenomena not explained by classical theory. We urgently need their equivalents in economics to forge the new economics of the future, where natural capital is no longer an externality and sustainability rather than growth is the key.

Gus Speth, a member of the Club of Rome and until recently the Dean of the School of Forestry at Yale University, described well what characteristics one wants this new economy to have. Let me quote what he said in his John H. Chaffee Memorial Lecture to the Council for Science and the Environment in Washington D. C in 2010.⁶

"We should be building what I would call a "sustaining economy"- one that gives top, over-riding priority to sustaining both human and natural communities. It must be an economy where the purpose is to sustain people and the planet, where social justice and cohesion are prized, and where human communities, nature and democracy all flourish, its watchword is caring - caring for each other, for the natural world, and for the future."

Constructing the new economics needed for a sustainable world will not be easy. One must be prepared to think boldly, clearly stating what are the goals sought and being prepared to jettison old concepts. Let me briefly illustrate this with an example, related to the

interconnection of unemployment and economic growth. One of the difficulties of imagining an economy without growth is that, in classical economic theory, unemployment rises if there is no economic growth. This connection between growth and employment is known as Okun's law, which is named after the American economist Arthur Okun who noted that there is an empirical relationship between growth in GDP and changes in unemployment.⁷ Percentage changes in unemployment are negatively correlated with GDP growth. In the United States, for instance, unless GDP grows around (2-3) % / year unemployment grows. Zero GDP growth causes unemployment to go up by 2%.

In a new economics, one must decouple unemployment from growth. This is possible, but it requires radical new thinking. Let me quote in this connection from a paper entitled *The Wealth of Nations Revisited* by Orio Giarini and Ivo Šlaus, both members of the Club of Rome, and their collaborators.⁸ Talking about the new economics needed, these authors state,

"...that requires formulation of a new theory, not just modification of prevailing concepts. There is no reason why we should not formulate a theory of economics based on the premise that all members of society have a right to employment, a theory that not only affirms the right but also presents the structures and processes by which this can be achieved."

In other words, in this new economics one must strive to put the welfare of human beings ahead of the production of goods and services. In principle, one can achieve a stable employment rate even with no GDP growth, if one can unlink the percentage of unemployment from the rate of growth of GDP. This may occur if one transitions to a different economy where there are more labor intensive sectors, as suggested recently by Tim Jackson and Peter Victor.⁹ It also can occur (at least in some sectors) in Gunter Pauli's "Blue Economy" where one makes waste streams productive via bio-mimicry, effectively creating new jobs where before there were none.

An employment-centric economics in a world of little or no-growth by necessity must be quite different than the present market based economics. Its natural time scale is the productive life-span of human beings, rather than the quarterly reports that rule modern corporations, not to speak of the millisecond transactions that now seem to dominate financial markets. On this human time scale, actions that incorporate the welfare of future generations and the preservation of the environment become natural.

In any consideration of the future, attention should be closely paid to what economic framework will underpin the society of the future. In my view, to aspire for a world that is sustainable, the economic thinking needs to radically change. Consumption can no longer be synonymous with wealth. Consumption increases current well-being at the expense of future well-being, while wealth measures stocks of natural and social capital carried into the future. Thinking of future society in an economic framework which puts people and nature first will lead to sustainable scenarios for the world. Sustainability and new economics are complementary concepts and mutually reinforcing.

To effect the needed transformations to implement a new economic structure based on sustainability and not growth is an immense and difficult task. However, it is important to note that although it is desirable to move the whole world along this path, it is unrealistic to

imagine that this will happen all at once or that it will happen in the same fashion in different regions of our planet. To move mankind towards a sustainable future, it is much more urgent to stop growth fueled by consumption in the developed world than in the developing world. In addition, it is much more likely that the changes needed to move our planet towards a sustainable future will be made first in a few countries or regions where these ideas will find more fertile ground. In my view, in this respect, regions of the world which are still not as beholden to a market economy based on consumerism as other parts of the world have great potential to play an exemplary role.

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The Evolution of Wealth & Human Security: The Paradox of Value and Uncertainty

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Life evolves by consciousness, consciousness evolves by organization. Human life evolves by a progressive heightening of our awareness, expansion of our knowledge, widening of our attitudes, and elevation of our values. This evolving human consciousness progressively expresses itself through the formulation and creation of more complex and effective organization – a seamlessly integrated, organic web of relationships encompassing ideas, knowledge, people, activities, processes, systems, technology, laws, institutions, power and values – political, economic, social, cultural, intellectual and psychological. The capacities of one person acting on his own are limited, but the action of organization has no limit. Organization creates abundance.

The evolution of economy is an integral part of the wider evolution of human consciousness and social organization. The history of economics and economic thought reflect this process. Progressive advances in our collective capacity to generate wealth and promote human security are the results of this process. Our comprehension of the process has a profound bearing on the development of that capacity. Rightly perceived, we can discover the true relationship between scarcity and wealth, uncertainty and human security, and the means to transform one into the other. This requires a change in perspective, a shift in values from the quest for immutable, natural economic laws governing the blind pursuit of money and monetarized growth to a focus on the intrinsic value and creative potential of human beings in quest of ever-expanding security, welfare and well-being – the real wealth – that all humanity aspires for. It requires, too, the development of appropriate measures consistent with this shift in values and perspective. When growth focuses on people rather than things, the limits to growth give way to limitless growth.

1. The Rise of Uncertainty

Economics as a social discipline was founded at the end of the eighteenth century on the basis of Adam Smith's *Wealth of Nations*. Writing at the dawn of the Industrial Revolution when agriculture was still perceived as the major determinant of wealth, Smith was a practicing moral philosopher, firmly committed to fighting poverty and generating prosperity, not only in his native Scotland but worldwide. He perceived the enormous power of social orga-

nization to generate wealth – the power of division, specialization of labor and technology to optimize efficiency and the power of markets and trade, both domestic and international, to incentivize producers and benefit consumers. A firm believer in freedom, he advocated free trade as more conducive to human welfare than mercantilist and monopolistic policies; but he would never have countenanced a world in which the sanctity of the market is given precedence over the well-being of human beings. He believed in freeing economic activity from the arbitrary will of feudal landlords, monarchs and parliaments, but equally so from the narrow self-interest of businesses which advocated policies beneficial to themselves while detrimental to society-at-large.

Born in an age steeped in Newtonian and Cartesian concepts of immutable natural laws and the clockwork certainty of physical nature, he based his concept of economic value on the equilibrium price between supply and demand resulting from unimpeded exchange of goods. That, he argued, was the best way to provide signals to producers where to invest their capital and what to produce and to ensure the lowest possible price to the consumer. Considering foreign wars and enforced colonization a tremendous waste of capital and human resources, which should be more properly invested for productive purposes, he would have firmly rejected the contemporary view that all economic growth is good growth. Yet theoretically he did not distinguish positive from negative contributions to national wealth. At a time when less than half of all economic activity occurred through monetary transactions, he perceived the catalytic role that money played in facilitating commercial exchange and promoting capital investment in manufacturing. But he was extremely skeptical of the efficacy of separating ownership from management and would have been appalled by modern financial markets which have divorced money from its primary role as a lubricant to production and trade in the real economy. An astute observer of fact with a keen historical perspective of social evolution, he drew lessons from the distant past applicable to the tumultuous times in which he lived and based his conclusions on experience rather than ideology. His contributions in thought were validated by the remarkable achievements of the Industrial Revolution, but most of what we now refer to as the service sector did not exist at the time and lay outside his field of consideration.

The world has radically changed since Smith's days, but economics has remained strangely wedded to concepts which were brilliant insights in his time, but irrelevant, misplaced and even dangerous in our own. Smith would have been the first to acknowledge it. Early in the 20th century, the focus of economics shifted from the supply to the demand side of the trade equation, but the equation itself and the basis for valuing economic activity remained unquestioned. The reference to a price equilibrium justified the search for a system providing a higher and higher degree of certainty. It was deterministic, linked to a frozen definition in time and space. Uncertainty was thought to result from insufficient knowledge, a deficiency that could be overcome with time and eventually eliminated.

While economics clings to the static concepts of equilibrium and certainty, science has evolved over the past century towards an undeterministic view. It does not pretend to provide definitive (godlike) knowledge. Paradoxically, the more we know, the more we identify an increasing number of questions: understanding our ignorance is the first tool in the advancement of knowledge.

We now perceive that certainty is a rare exception rather than the rule. Rather than regarding that as a negative, we perceive that this uncertainty really represents an unlimited field of possibilities out of which we can seek to create positive value, as the insurance industry harnesses the uncertainty of individual events to create greater security for society as a whole. A mechanistic view of manufacturing will not serve in this age in which production volumes are enormous, time quite literally flies, needs change with lightning speed and all aspects of society – and increasingly of the whole world – have become integrated into a unified system, a living organism, that is undergoing a continuous process of rapid evolution.

The formulas of economics no longer suffice to reflect the inherent complexity and uncertainty of contemporary society. Our concept of economic time needs to change radically. In a traditional economy, time could be measured from the point at which production begins and ends with a sales transaction. In our contemporary real economy, time begins long before production or sale and extends long afterwards. Research commences years or even decades before a product is ready for market and fails to generate a marketable product more often than it succeeds. The uncertainty of that investment in research constitutes a major portion of the cost of products today.

Furthermore, we can no longer assess the cost and profit of a product or service at the precise time of delivery. The costs associated with product recalls, product liability, waste management and remediation may arise years after the sale. The delivery of many services extends over very long periods, as in the case of education, medical care and insurance, and cannot be valued in terms of discrete instantaneous transactions. Value resides in the sustained performance of a complex delivery system over time. Thus, the notion that economic value is created and can be measured at a finite point in time based on cost of production is outdated and needs to be replaced with a concept that takes into account the utilization value and utilization time with reference to the user. When utilization over time is taken into account, we rapidly discover that any hope to arrive at objective certainty (as in classical economic equilibrium) is unrealistic. Uncertainties and probabilities have become essential concepts for understanding and managing the wealth of nations. The key economic challenge today is to understand and manage risks, uncertainty and vulnerability.

As Smith understood the negative, wasteful contribution of military expenditure to national wealth, we now realize that this is only one instance of a much broader range of negative economic activities, negative in the sense that they destroy and deplete rather than augment wealth, welfare and well-being. When properly accounted for, depletion of non-renewable resources and pollution of the environment may wholly negate the beneficial effects of economic activities we once cherished with religious faith. The concept of sustainable development is based on the best use and preservation of resources, both human and material, taking into due account the notions of utilization in time and the issue of uncertainty. We need to redefine what we mean by and how we measure value as the basic reference point for the wealth and welfare of nations.

Extended monetarization of the economy was an essential component and consequence of the Industrial Revolution and the model of economic growth that has become prevalent worldwide. In recent times, it has been a common error to blithely assume that all growth contributes to human welfare. On the one hand, our per capita economic measures fail to take

into account the dramatic increase in income and wealth inequality, concealing the fact that growth and rising national per capita can be associated with flat or falling living standards for large sections of the population. The numbers may indicate overall progress which reality does not reflect. The financial sector which caters disproportionately to the wealthy has been the fastest growing sector in recent decades. But do rising stock prices that boost the balance sheets of the super-rich really reflect a better life for the common man? On the other hand, monetary measures fail to reflect enormous improvements in quality of life as well as the extension of the monetary economy into activities that were previously carried out without monetary transactions.

The changes represented by uncertainty, utilization time, negative value and monetarization in economics represent quantum shifts in conception comparable in their significance to those brought about in physics by Einstein's Theory of Relativity and Heisenberg's Uncertainty principle. They compel us to re-examine economic thought at its very roots, to challenge once sacred beliefs and to fashion new economic theory and new measures appropriate to the economic conditions and social aspirations of humanity in the 21st Century.

When we do this, we may not arrive at greater certainty, but we most definitely do arrive at a greater awareness of the creative process and the enormous untapped potential, which are the other side of uncertainty and constitute a fundamental paradox of our existence. For, uncertainty begins to reveal itself as a field of infinite creative possibilities for the generation of wealth and the enhancement of human security.

2. In Quest of Certainty

Our conception of heaven is a world blessed with an unlimited and assured abundance of everything good. According to the Bible, Adam and Eve were expelled from the Garden of Eden and cast into a new economic world characterized by scarcity and uncertainty. They discovered a world on which Nature had bestowed a richly abundant physical and biological dowry and patrimony (D&P) of fresh air, pure water, minerals, fruit and nut-laden trees, edible and medicinal plants, animals for food and clothing, and many other riches, though not everywhere and not always in the desired quantity or quality.* Their descendants established human settlements on lakes and river basins where basic human needs could be most easily met by hunting and gathering. But as population expanded, Earth's abundance proved less adequate and reliable.

After carefully observing the methods of Nature for millennium, the descendants of Adam and Eve acquired knowledge of some of her methods and even discovered ways to improve upon them. The birth of agriculture marked the first economic revolution in which human beings enhanced the natural productivity of their environment. They replaced the limitations and uncertainty of gathering Nature's bounty with the greater abundance and security of producing their own food. Wandering tribes gave place to sedentary settlements organized around the seasonal food production cycle. To the natural and biological D&P with which the earth was endowed, human beings added to enhance their well-being a man-made cultural D&P. New facts were discovered, ideas conceived, tools fashioned, methods invented, skills

* The word Dowry is used in conjunction with the word Patrimony to ensure that the notion of "global assets" is sufficiently wide to encompass both feminine and masculine components.

developed, activities sub-divided and specialized, customs and social structures established. Thus, early humanity embarked on the path of development from ignorance to knowledge of Nature's ways, from unstructured life in nature to the structured life of civilization, from the insecurity of dependence to the greater certainty of mastery.

The last ten millennia trace the most recent and dramatic steps in the process by which human beings acquired the knowledge to improve life on earth in quest of heavenly abundance and organized the activities of the society to translate that knowledge into practice. Through never-ending research and experimentation, they discovered new sources of energy as substitutes for wood, new varieties of food, new materials for building and crafting, new instruments and techniques with which to feed, clothe, house, hunt and war with one another. They subdivided the activities of the community into an increasing number of specialized tasks and occupations. They evolved an hierarchy of authority to ensure order, coordination and cooperation among their members. They created customs, rules, laws, systems to protect, standardize, regularize and harmonize. Each of these discoveries and inventions enhanced their capacity for survival amidst the unpredictable conditions imposed by nature.

3. Discovering the Wealth of Nations

Perhaps to their puzzlement, successive generations of our ancestors discovered that each marvellous achievement was eventually followed by new types of problems and new forms of uncertainty. Leaving the forest for the security of sedentary settlements, as their numbers grew so did their needs, creating new problems associated with larger, more complex societies. The human population grew from about 10 million in 8000 BC to a billion in 1800 AD, when Thomas Malthus forecast that there would be insufficient resources to feed Europe's growing population. His calculations were not wrong. As in the case of so many before and after him, his reasonable prediction was confounded by the unexpected. In this case it was the introduction of the potato from the New World. Scarcity and uncertainty were once again forestalled, but not eliminated, by new discovery emerging from the unknown.

In 1776 another keen observer and analyst, Adam Smith, published his famous treatise presenting theories that would become the foundation for economics as a specific discipline or science. At a time when French Physiocrats such as Francois Quesnay were insisting that agriculture is the principal source of national wealth, Smith had the foresight to perceive that the development of manufacturing would become a crucial weapon in the fight against scarcity.¹ Published a year after James Watt patented his improved steam engine, which was soon to usher in the first Industrial Revolution, Smith perceived a wider formula for national wealth consisting of three major terms: division of labor, accumulation of capital and free markets. A new organization of work employing skilled workers and technology to perform specialized tasks manufacturing more products with less resources and at far lower cost than ever before was the basis.² Watt's steam engine provided the energy needed to propel a wide range of machinery and the mechanical impulse to produce the required movements.³ Smith also understood the importance of another form of D&P, monetarized D&P or Capital, as a unique social organization designed to increase the mobility of resources in time and space. Another social organization, Market, provided the maximum incentive to both agricultural and industrial producers to generate saleable surpluses rather than merely produce for self-consumption. At a time when only a tiny portion of produce entered the monetarized sector

of the economy, Smith understood the increasingly important role of money and credit to promote trade.

But Smith's conception did not end here. His interest was in political economy in the classical sense of the word, a branch of moral philosophy concerned with ethics and social justice. He viewed political economy as the science of a statesman or legislator whose twin objectives were to generate prosperity for the people, while also supplying the state with sufficient revenue for public services. His quest was not to discover the immutable natural laws of economics, for he understood that economy was a purely human invention. His goal was to comprehend the most effective policies to optimize the welfare of the people, the nation and the entire global community. His view encompassed economics, politics, public administration, history, anthropology, technology, management, sociology and psychology as interdependent determinants of social accomplishment.

Writing on the eve of the American Revolution in an intellectual atmosphere saturated by the idealism of freedom and equality, Smith railed against the narrow self-interest and monopolistic power of mercantilist policies, which favored some industries, businesses and classes of society over others. He exposed the inefficiency and corruption of government-authorized monopolies such as the East India Company, which the English government was forced to bail out numerous times before taking it over completely. He condemned colonialism as an exercise in vanity and advocated either the liberation of the American colonists or according them the full rights of British citizens before animosity destroyed the prospects of mutually beneficial commercial relations. He rightly predicted that America would become the world's largest economy and the wealthiest nation on earth within a century. US industrial output grew from 0.8% of world output in 1800 to 23.6% in 1900, while Britain's rose from 4.3% to 18.5%.⁴

Smith was a pragmatic advocate of free markets based on objective evidence, but he was never doctrinaire. His objective was always the welfare of the entire collective, not a belief in social Darwinism. Resigning himself to the inevitable necessity and inherent inefficiency of public administration, he praised Britain for its good governance in comparison with the other nations of Europe. His book is a remarkable record of the endless experimentation by society to arrive at the optimal blend of individual freedom and public policy. Understanding the powerful influence of business on government, he sought a mechanism to minimize this distorting influence.

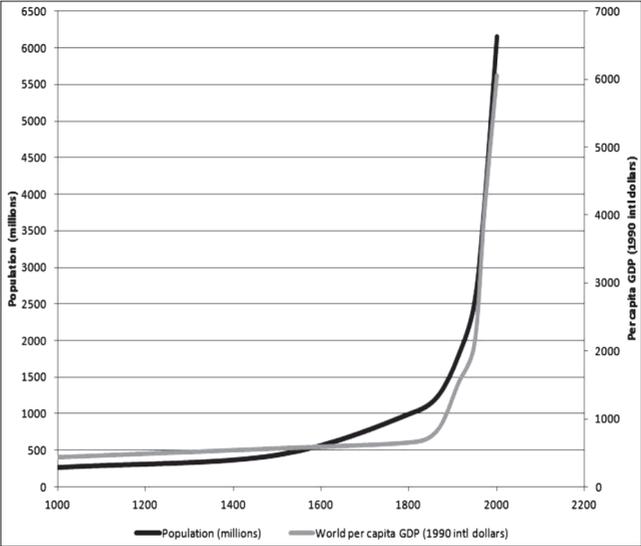
Smith wrote at the dawn of the most remarkable period in human history and foresaw the gathering of social powers which were shaping the future. He perceived how the proper combination of various forms of social capital (cultural D&P) could draw upon the physical and biological endowments of earth to generate unprecedented wealth for the nations of the world. Taken together, they formed the basis for a new social organization of production and consumption with far greater capacity to meet human needs and enhance human welfare.

The technological advances of the First Industrial Revolution were primarily quantitative rather than qualitative. The tools and machines employed were extremely simple by contemporary standards and required relatively little education to build or operate. The early steam engines resembled and were based on the same principle as the common kitchen pressure-cooker. The flying weaver-shuttle involved a simple hammer mechanism to propel the shuttle

to the other side of the loom. But in the latter half of the 19th century, the development of more sophisticated steam-powered ships and trains followed by the internal combustion engine and electrical power generation ushered in a qualitatively very different Second Industrial Revolution. The D&P for this new phase was human and social capital based on mental resourcefulness applied in the fields of scientific research, commercial organization and finance. Scientific developments were converted into a plethora of new products based on new industrial technologies managed by new types of publically owned and financed, multidivisional business corporations. The increasing emphasis on knowledge also created increasing demand for rapid development of human capital through expansion of the educational system to produce the increasingly diverse range of scientists, engineers, managers, technicians, marketing and investment experts needed by the new social organization.

The increasing welfare and human security generated by the two industrial revolutions account for the most rapid expansion in population and living standards the world has ever witnessed, as shown in Figure 1 below. This marriage of science, technology, organization and finance reached full maturity after World War II and was primarily responsible for the 25 years of continuously high rates of growth in most industrialized and industrializing countries.

Figure 1: World Population and Per Capita GDP (PPP) from 1000 AD to 2001⁵



4. Monetization of Economy

The monetarization of the economy was an essential characteristic of the Industrial Revolution. Money of various types and forms has existed for thousands of years – shells, animals, corn, tobacco, copper, gold and silver were widely used in different times and places. However, until the beginning of the Industrial Revolution only a small part of economic activities involved the exchange of money. Money is one of the greatest of all human inventions. As language radically increases the capacity of human beings to communicate and interrelate,

money acts as a catalytic medium to facilitate economic exchange. Its basis is some form of inherently valuable or symbolic object – wampum beads, coins, a deposit receipt for gold or some other commodity, bank notes, bills of exchange, credit cards, digital entries on a computer screen, or something even more ethereal and esoteric. But regardless of its form, the value of money arises from its general social acceptance and public confidence in the social organizations designed to issue, accept, store and regulate it. Its power is based on a system of standardized values by which all products and services can be measured on a common scale. Thus, the transition to a monetarized economy marks a major landmark in the evolution of complex social organization. The spread of money extends the reach of the social structure to encompass domains of life that previously lay beyond the organized sector.

In an agrarian society the vast bulk of production and consumption is for self-consumption and does not involve money. Agriculture thrives under conditions in which surplus production can be exchanged for other types of goods, otherwise there is little incentive for a farmer to produce more than a family can consume. Thus surplus gives rise to trade. Trade becomes organized in the form of markets, recurring physical locations or systems for the exchange of goods. Barter trade is limited by the difficulty for both buyers and sellers to find others who have something of equal value that they are willing to exchange – which depends on a double coincidence. Thus, trade gives rise to money, a medium for valuation of all products according to a common scale, which facilitates exchange over vast distances and permits storage of value over long periods of time. Trade in Renaissance Europe flourished after the adoption of Hindu Arabic numerals in the 10th century and double-entry bookkeeping in the 13th century made it far easier to calculate volumes and determine the profitability of transactions. Bills of exchange for goods traded across the continent became an important form of commercial credit, giving rise to the forerunners of modern banks. Thus, accurately minted coins established international markets, accurate accounting methods, commercial credit institutions operating on a foundation of legal rights and judicial safeguards constituting the basis for the rise of the monetarized economy.

Until the Industrial Revolution, the use of money was primarily confined to trading activities. No more than one percent of the life of an average European was organized in a monetarized system by selling their time for money or using money for trading; whereas today the average has been estimated at 16 percent or more.* During the feudal period, even large feudal landlords possessing thousands of acres of arable land frequently had little use for money, for there was little they could purchase in exchange for their crops. They commonly used their surplus production to feed large numbers of unproductive retainers, often a thousand or more, who endowed the lord with social status in times of peace and an army for defense or conquest in times of war. Thus, even kings and aristocrats often possessed little money, since land was the true measure of wealth.

The fact that before 1800 banking activities were often carried on by marginal groups which did not really belong to the upper classes shows that money was still regarded as a secondary tool of societal organization, rather than an integral part of the social structure. Historian Will Durant recounts an incident just before the French Revolution when the very wealthy wife of a leading Parisian banker was invited to an aristocrat's home for a gathe-

* Evaluation made by Ivan Illich in a paper on Shadow Work, presented at a conference at the University of Kassel, September 1980.

ring of high society women. When time came to sit down for dinner, the banker's wife was asked to eat in the kitchen. After the Revolution broke down the insurmountable barriers between birth and wealth in France, money came into its own as a premier symbol of status and a source of social power. Across the English Channel, the more pragmatic English were making an evolutionary accommodation with money. The younger sons of English aristocrats were permitted to seek their fortunes in business while many an insolvent but titled elder son condescended to marry a woman of wealth from the middle class in order to replenish the economic resources of an impoverished estate and tarnished coat of arms.

5. Evolution of Values & Power

The growth of commerce and industry had its own revolutionary effect on societal structure and power, gradually undermining the foundations of feudalism in Europe. As improvements in the rural transportation system opened up access to domestic and international markets, wealthy landlords preferred to convert farm surpluses into money to purchase Asian silk, spices and tea or American sugar, rum and tobacco. As a consequence, the population living on huge estates declined from several thousand to a few dozen. Displaced workers migrated to towns and cities in search of productive employment, foregoing the security of dependence and subordination to a wealthy master in return for the freedom to sell their labor or start their own enterprise. Those that remained on the farm gradually acquired more permanent and protected tenant rights and liberties from arbitrary authority. In both instances, a greater freedom of choice and a greater spirit of independence prevailed. Thus, monetarized trade had a powerful transformative effect on society as a whole. Commercial revolution and political revolution proceeded hand in hand.

Until Smith's day, little recognition had been given to the role of money as a means of stimulating production. Money-lending for interest was condemned by the Catholic Church largely because it was not associated with any productive function and was equated with usury. Saving was regarded as a socially unproductive and socially reprehensible activity, which was often mocked in the classical literature as in Moliere's play *The Miser*. Before the Industrial Revolution all debts were considered 'bad' and failure to pay one's debts was sufficient grounds for imprisonment, as depicted in Oliver Goldsmith's novel *The Vicar of Wakefield*. When Goldsmith was himself thrown in debtor's prison, his friend Dr. Samuel Johnson discovered this manuscript at Goldsmith's home and sold it to raise sufficient funds to release him from jail.

Smith challenged the moralistic attitudes of previous centuries, extolling the virtue of savings as the principal source of the capital required for investment to enhance the wealth and welfare of nations. The growth of trade stimulated demand for money and the need for capital accumulation. Improved rural transport opened up distant markets for agricultural surpluses, necessitating the shift from barter to a more efficient medium of exchange. Long distance sea trade in luxury goods generated increasing demand for gold and silver coinage. Until 1800 banks mainly engaged in providing commercial credit for trading activities in which investment rarely exceeded five percent of total sales. But the high cost of tools and machinery required for industrialization, which demanded increasing amounts of capital, gradually transformed banking into a highly effective social organization for collecting pub-

lic savings and channeling it for productive investment in industry. Joint stock companies or corporations in which several investors shared ownership became more prevalent.

The development of new moral values and cultural attitudes paralleled the emergence of new technologies and production processes. These changes also brought about a marked change in social values and social power. As industry became an increasingly important source of national wealth and military power, the power and status of the aristocracy and the church gave way to the power and status of money. The monetarization of the economy led to the monetarization of society and politics. The Industrial Revolution became a revolution of capitalism.

Originally a symbol of economic value and purchasing power, through this process money became increasingly a symbol of social value and social power. Sacs of gold coins sufficient to purchase a rural estate or a shipload of merchandise gradually acquired the power for entry into the social elite and the halls of political power. Money conquered space, making products mobile. It became a catalyst for economic transactions. So too it abridged or eradicated social distance between the classes. It conquered time by enabling a family to acquire in a single life time the status and power once proudly accumulated by inheritance over countless generations. Money not only made products more mobile. It made social and political power more mobile and transferable. It made possible the alteration of social structures without guillotining an entire class of people, thereby facilitating peaceful social evolution in place of violent political revolution. A society capable of more rapid change exhibited a greater capacity to learn, adapt, experiment, innovate and develop.

6. Accumulating D&P

In the course of discovering a new creative power, humanity tends to lose sight of what it already knows and utilizes. We create marvellous new instruments for our advancement and then subordinate ourselves to those instruments, becoming increasingly dependent and enslaved. Thus, we have become victims of the machines we fashioned for our convenience, the laws framed to uphold our rights, the weapons we built for our defense, the markets we established to facilitate exchange, and the money we created for our collective prosperity. In the course of discovering the remarkable power of money as a form of capital, humanity has progressively lost sight of the other forms of dowry and patrimony on which the welfare and well-being of society is founded.

The environmental movement that gained momentum after the publication of *Limits to Growth*, a report to the Club of Rome, sought to remind us of the obvious fact that the entire edifice of our modern economy is founded on the earth's natural and biological D&P. Accumulation of monetary capital alone cannot ensure continuous growth, indeed it will have diminishing returns and give rise to increasing problems, unless economic growth can be carried on in a manner that preserves and enhances rather than destroys and depletes the natural capital. *Limits to Growth* did not condemn humanity to tread water perpetually at the present stage of its collective development. Rather it announced the limits of the old industrial model of growth, to the blind pursuit of growth for growth sake, and called for a significant change in the pattern and composition of economic activity.

In fact, such a significant change in pattern was already beginning to emerge at the time of the report, but its significance was not sufficiently understood. Over the past four decades, the old industrial model of economic growth has progressively given rise to the knowledge-based service economy, with profound implications for the economic future of humanity, as we will discuss later in this article. One consequence of this development has been an increasing shift in emphasis from dependence on material D&P as the principal source of economic growth to an increasing emphasis on social and human capital, two other forms of cultural D&P capable of unlimited renewal and augmentation, which are now accumulating at an unprecedented rate. As indications of this shift, the number of students in secondary schools globally rose from 40 million to 531 million between 1950 and 2008, while the number enrolled in higher education globally rose from 29 million to 151 million between 1970 and 2008.

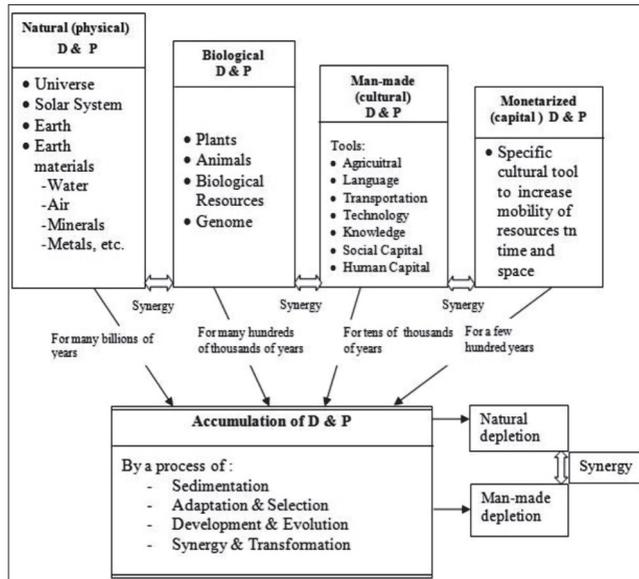
Accumulation is a universal phenomenon. D&P represents the global stock of asset of various forms of 'capital'. This stock undergoes a continuous process of inter-conversion. In some instances this process enhances some forms of capital while depleting others. But its main action is to multiply the value of all forms of D&P. Thus, the application of technology to agriculture has raised the productivity of the land five, ten and, in some instances, a hundred-fold. Sand, used for millennium as a constituent for making bricks, has subsequently become a source for making glass, silicon chips and fibre optic cables. Oil, which was once burned in lamps, is now converted into high value added synthetic materials and pharmaceuticals. Human beings, once valued primarily as a source of manual labor, have been increasingly replaced by machines and are now valued far more for their social, mental and creative capacities.

Figure 2 depicts four main categories of capital or D&P. All forms of capital exist in a synergetic relationship as part of an evolving continuum. The interaction of these various forms exhibits an inherent capacity for self-replication or multiplication. The evolution of social organization (Cultural D&P) has given rise to an exponential growth of financial D&P. The spread of education has provided the foundation for rapid development of science, which in turn has given rise to a remarkable period of technological innovation that is still accelerating as predicted by Moore's Law.

One type of D&P often becomes the basis for creation or development of another type. But this is not always the case. In some instances a rapid increase in one form of D&P does not necessarily reflect an overall increase in the total stock of global assets. No matter how important the monetarized economy may be, it exists and functions solely on the foundation of physical, biological, social and human capital. Exhaustion of water or non-renewable energy resources, destruction of biodiversity, social unrest resulting from rising levels of inequality, the squandering and deterioration of precious human resources due to unemployment and underemployment may co-exist for a time with rising levels of global financial assets, which have multiplied from \$12 trillion to over \$212 trillion over the past three decades.⁷ The current international financial crisis shows just how fragile and evanescent the perception of wealth may be when limited to a single measure such as money. In recent times we have witnessed the sudden disappearance of trillions of dollars of what were once thought to be hard financial assets. A failure to appreciate and respect the interdependence between these different types of assets can have far-reaching consequences, as the global impact of the 2008 international financial crisis on economic growth and employment illustrates.

Figure 2 also highlights another important attribute of economic value that is overlooked by contemporary theory. It can be either positive or negative. All that glows is not gold. All growth is not good growth. Economic activity resulting from war, environmental remediation, the rising costs associated with compensating for depletion of scarce resources reflect a deterioration in human welfare and well-being, not an enhancement, yet traditional measures of growth and national wealth regard them in the same vein as increased agricultural productivity, more housing, rising expenditure on education and healthcare.

Figure 2: Dowry and Patrimony (D & P) - The Source of Wealth and Value ⁶



In order for economics to evolve into a true science of wealth and welfare, new concepts are required to define with comprehensive preciseness the notion of value we seek to enhance and new measures are needed that accurately reflect the real impact of social activity on that value. A wider conception of D&P illustrates the limitations of a narrow definition of capital. But the problem extends still further into uncharted regions of social activity and potential beyond the veil.

7. The Notion of Value

It has always been recognized that a substantial part of productive activities in life and society are performed outside the monetarized context. Most classical economists from Adam Smith to John Stuart Mill devoted a considerable portion of their writings to a wider conception of productive labor and value that encompassed non-monetarized activities. Yet the very notion of value on which Smith founded his theory led in practice to the exclusion of the non-monetarized contributions to wealth creation in industrial societies. This was a logical result of his effort to focus on the means to enhance national wealth by harnessing the enormous potential of industrialization, specialization, trade and investment, rather than

on efforts to measure national wealth comprehensively. He rightly perceived money as a powerful instrument of social engineering with the capacity to solve the complex logistical problems associated with industrialization. Since then economics has continued to ignore non-monetarized economic activities.

Smith's concept of value was derived from a measurement system based on market prices resulting from the interplay of supply and demand. Price, the monetarized value of goods, seemed to be a clear, easily quantifiable yardstick to measure economic performance. The reference price of a good defined by its monetarized value had considerable advantages compared to the vaguer statements and subjective indicators of performance commonly adopted by the social sciences. An objective price was the economist's equivalent of the speed of light or the atomic weight of atoms in Physics. It elevated Economics above the other social disciplines and brought it closer to the quantifiable precision found in the natural sciences, where phenomena are more precisely defined and more readily lend themselves to objective measurement. Thus, during the Industrial Revolution, the convenience, practicality and reference to the scientific method of analysis combined to focus attention on monetarized activities as the key tool for developing the wealth of nations.

While a focus on monetarized phenomena has proved helpful for understanding the production and utilization of manufactured goods, it is far less useful for obtaining a clear and comprehensive picture of how society evolves and how economics is being transformed in recent times by the emergence of the new service economy. Both unmonetized and non-monetarized wealth are inadequately accounted for in traditional economic theory.* Today the predominance accorded to monetarized activities needs to be placed in a broader perspective. Several considerations compel us to insist on a wider conception of economic activity.

First, the monetarized and non-monetarized fields are not separate air-tight compartments. There is a continuous movement across the invisible line separating priced from free goods and services. Thus, tasks which were formerly carried out without the use of money such as mom's cooking and housekeeping have in recent decades been shifting to the monetarized economy as more and more women seek employment and families rely on fast food and daycare services to meet their family needs. This has a double-impact on monetarized growth, since it reflects both in rising family incomes as well as rising revenues for the daycare and fast food industries. At the same time, it does not properly account for the negative impact on life styles, leisure and health arising from the consumption of fat-rich restaurant foods, higher levels of family stress and less time for exercise. Similarly, the costs of retirement have escalated due to the continued fragmentation of families resulting in a separation of the generations. When processed store-bought and restaurant foods replace home-cooked preparations, quality and value may suffer, but GDP registers an increase in wealth-creation by the food industry as well as for businesses engaged in disposal of the discarded food packaging materials. No longer is grandma so readily available to care for the kids or sons and daughters to aid their aging parents. This has generated greater freedom and independence, but it has been bought at a price in terms of quality of life, which current economic measures do not accurately reflect.

* Monetarized refers to systems in which money is used for exchange. Unmonetarized refers to systems in which exchange takes place without the use of money, as in barter exchange. Non-monetarized refers to systems in which no economic exchange occurs (self-production, unpaid housework) or no economic value can be assigned (air, health, family, creativity, leisure, culture, stress, peace, security, well-being).

With the advent of the Industrial Revolution, money came into its own as the pre-eminent social institution. Until then, more than 50% of all economically productive activity was self-production for self-consumption or barter, i.e. it occurred without monetary exchange and remained non-monetarized. Even today money systems represent only a very limited portion of what truly characterizes the wealth of nations. Ecological resources are a good example of non-monetarized aspects of wealth. As ecologists have been emphasizing for decades, the monetarized system of measurement assigns values only according to the cost of extraction or processing. Thus, clear air and pure water may be assigned zero value; whereas when water has to be treated in order to remove impurities resulting from human activity or purchased in order to ensure health and hygiene, monetarized measures record the creation of positive new wealth. This view obscures the process by which free goods become scarce and once scarce goods become free. Is the world really “richer” today by \$60 billion a year because so many people purchase bottled drinking water to avoid the risks of drinking water from the tap?

The fact that resources which were once free or available at very low cost have become an increasing cost component within the industrial production system illustrates how the monetarized economic system may create new forms of scarcity in some areas in the very process of striving to reduce scarcity in others. At the same time, technological and organizational advances can transform once scarce products and services into free goods. Access to information and many forms of communication, which were once very costly, have become virtually free. Are we not richer today for the capacity to access the world’s knowledge at our fingertips and to communicate instantaneously across the globe, even though we pay little or nothing for the privilege?

When we take full account of the complex interactions between the monetarized and non-monetarized worlds, we realize the inherent limits of the system of evaluation made prevalent by the Industrial Revolution and the underlying assumptions about wealth creation on which it is based. The increasing scarcity of ‘goods’ in the non-monetarized world may offset or even overcompensate for the decrease in scarcities in the monetarized one. The two worlds are interdependent. Clearly there is need for developing a theoretical framework as well as a system of accounting and monitoring capable of reflecting what is actually happening.

8. Beyond the Veil

There is another equally important reason for expanding our notion of value to include non-monetarized activities. As a rule new social potential first appears in the unstructured, non-monetarized sector and only gradually transitions over to the money economy. In this sense the non-monetarized sector is the birthplace and breeding ground for future progress. When Richard Sears started his mail order catalog in 1893 to cater to the needs of rural farmers who lived too far from urban centers for convenient access to goods, little did anyone realize that by 1920 the company he founded would become the largest retailer in the world, yet it still did not own or operate a single retail store. Rural America was prospering, but it lacked an appropriate delivery system to fulfill its rising aspirations. Sears’ catalog was a new form of social organization designed to monetarize this latent potential.

With the advent of mass production after World War I, the automobile began to transform American life, resulting in a rapid migration of people from urban centers to new suburban

communities, which were far removed from the convenience of urban shopping center. General Robert Wood, a logistics expert who helped build the Panama Canal, learned of this trend reading the US Statistical Abstracts. When he took charge at Sears in the early 1920s, he established the first of what became known as suburban shopping centers, which he subsequently opened in suburban areas across the USA. As a consequence, Sears' department store business expanded right through the Great Depression, a time when overall retailing in America was down by 25%. Once again Sears converted a non-monetarized potential into monetary wealth.

Social change gives rise to new needs and new opportunities which first appear in the unstructured region of non-monetarized potential. This uncharted region is not merely a finite residue left out of the national accounts. It is a creative frontier from which new opportunities are constantly emerging. Education is an example. It began millennia ago as an informal arrangement for the transference of knowledge from one person to another. In the 19th century, institutionalized public education became widely prevalent. More recently, all types and levels of education have been organized to convert it into commercial opportunities. As a consequence, the field of education has grown explosively to become a \$2 trillion global industry.

Whatever its shortcomings, fast food provides a valuable service that is increasingly in demand worldwide. In the USA alone the industry expanded from \$6 billion to \$110 billion between 1970 and 2000, currently providing employment to about 2.7 million people. Globally it is a \$200 billion industry. Similarly, the daycare industry has expanded dramatically to meet the needs of working women. In the USA, daycare is now a \$35 billion industry employing 1.5 million people and the fifth largest occupation for women in America. Overall the percentage of women working in OECD rose by 55% over the past half century.

The explosive growth of microfinance globally in recent decades is an example of a social potential that remained unutilized because existing institutions were unable to find an appropriate strategy to monetarize it. As a rule, women are more reliable and responsible in managing money and repaying loans than men and they have entrepreneurial capabilities and productive talents which they are unable to express for want of effective institutional support. Since the founding of Grameen Bank thirty years ago, microfinance has grown into a global industry of more than \$20 billion serving the needs of 150 million people, three-fourths of them women.

Beyond the veil of money lies the unorganized, unstructured informal fringe of society that is continuously evolving new forms and throwing up new potentials, the ever-expanding source of social creativity that is the basis for future prosperity. Google was founded as a search engine company in 1998 without any evident model for generating revenue. Two years later it introduced Adwords, an innovative system for matching the interests of searchers with the offerings of advertisers. In a decade Google built Adwords into a \$28 billion business. The manufacture of material goods may have its limits, but human imagination and social innovation do not.

Furthermore, present measures of wealth fail to fully take into account the future value of investments in the non-monetarized sector. Can we really assess the value of investment in education in terms of the current cost of delivery? Such an accounting system may very well

prompt us to invest in capital equipment and dispense with labor and education altogether. Measuring productivity as output per person rises when machines replace people, but what happens to the people? The carrying cost of idle plant capacity reflects badly on a company's balance sheet, but which financial statement reflects the carrying cost of unemployed human beings and the deterioration in social stability and quality of life that result? Attempts to measure economic activity and wealth without reference to the impact on human beings can lead to surrealistic conclusions. It is dangerous. The one and only acceptable objective of economic activity is to promote welfare and well-being of all humanity.

Current systems of national accounts do not even include a balance sheet of assets and liabilities, let alone one that reflects the impact on non-monetary resources. Education is investment in the most precious of all our resources, human beings. Businesses regard capital spending on future production capacity to enhance future profits as investment rather than expenditure. Similarly, present spending on education should be accounted for as an investment in human capital to promote future wealth and welfare, as proposed by Jacobs and Šlaus in an earlier issue of *Cadmus*.⁸ Only a human-centric economic theory and system of measurement can effectively serve these objectives.

The process by which the creative potential of the non-monetarized dimensions of society is converted into wealth is yet to be fully understood. We might say that the entire monetarized economy represents an effort to structure and organize various aspects of humanity's social existence so that they can be performed more cheaply and easily for the benefit of the collective. But this act of organization does not diminish the size or potential of the non-monetarized sector; rather it enhances it, because it progressively liberates human beings from the total preoccupation and drudgery of physical labor and material activities, so they can concentrate more of their time and energy on developing and expressing higher faculties. Freedom from drudgery provides the leisure time for thinking, exploring, discovering, interacting, inventing, innovating and creating. In the process, human beings become less physical, more social and mental; less repetitive, more creative. As the external society becomes more organized, the inner character of human beings becomes more developed and capable of expression in outer life.

During the heydays of the industrial age, the deficiencies in traditional measures of economic flow may not have undermined their essential utility. But today they raise fundamental questions which need to be addressed by new theory to evolve a more valid conception of wealth-generation and human welfare. Which blend of monetarized and non-monetized activities contributes most positively to wealth-generation and human welfare? How can we more consciously tap and organize the unstructured, non-monetarized social potential to promote greater human security, welfare and well-being?

9. The Utopia of Certainty

Ever since Man was expelled from Paradise, he has dreamed of immortal life in a utopia founded on the certainties of universal truth, where he can live fully secure from ignorance, error, death, want and from the hazardous whims of fickle Fortune. Before the Renaissance, religion was the main source of this aspiration for immortality and perfect certainty. Although the sources and imagery have changed with the passage of time, the dream lives on in the

aspirations of modern science. Rapid advances in the spread of scientific knowledge, backed by a positivistic faith in science's capacity to uncover the processes by which both physical and human events occur and the remarkable technological achievements resulting from the application of science to life and material nature, have reawakened the utopian dream in a new form. Underlying all its achievements is a belief that a scientific mastery of reality will one day come very close to universal truth.*

In Descartes' time he was suspected by theologians of launching a counter-religion to replace the universal truth based on God and administered by the Church. Descartes defended the scientific method of induction by asserting that it focused only on those realities which are clearly verifiable and distinct, but the theologians perceived that the ideological and metaphysical implications of his approach could be much greater. Indeed, the words science and scientific have come to connote that which is certain beyond doubt.

Cartesianism signaled a tremendous change in cultural perspective, which was at the root of the Industrial Revolution. But it has not led to the world of certainty that 19th century scientists once anticipated and humanity still aspires for. Rather, we now realize that the further we pursue the quest for scientific knowledge, the more we discover our own ignorance and the more uncertain we become about many things we once comfortably took for granted. As Pascal said, "Science is like a ball in the universe of ignorance. The more we expand knowledge, the greater the ignorance encountered by the ball's expanding surface."⁹ Today we measure the advance of science much more by the growing number of questions it seeks to answer than by the veracity of the answers it arrives at. Science has discovered the relativity of all our perceptions and measures of reality in space and time. It is compelled to acknowledge fundamental limits to mind's capacity for knowledge which are inherent in nature. We may never be able to really 'know', but we can always 'know' more than before.

A positivistic conviction in our progress toward certainty was an explicit premise of the Industrial Revolution. The objective was to uncover and assemble the discrete pieces of valid knowledge needed to complete the picture of universal truth. Experience has exposed the fallacy in this view. For each attempt to frame a problem involves defining specific assumptions which may be at variance with or contradictory to previously accepted truth. Assuming that the earth was flat proved satisfactory for land-based navigation across continents, but invalid when trying to navigate the open seas. Each new discovery unfolds new layers of reality previously unknown and reveals increasingly complex relationships between the layers. Mendel's concept of a gene proved adequate for cross-breeding of plants, but not for understanding the reproduction of chromosomes or the molecular synthesis and recombination of DNA. The microscopic behavior of molecules and atoms has proven inadequate to comprehend the behavior of subatomic particles or to reconcile them with astronomical phenomenon.

When it comes to the social sciences, the quest for certainty has proven even more elusive. While the division of knowledge into discrete subjects has enabled physical science to study material nature one layer at a time and uncover the relationships between the layers, social life represents an inextricable mixture of factors – political, social, economic, cultural,

* Most of the discussion on uncertainty as well as many other important concepts presented in this article are based on original work presented in Orio Giardini and Walter R. Stahel's *The Limits to Certainty* (Dordrecht: Kluwer Academic Publishers, 1993).

historical, geographical, demographic, psychological – which refuse to remain segregated or respect the boundaries assigned to them by the scientist. Thus, money is at once an economic, social, political, cultural and psychological power. Its value, power and behavior are the complex resultant of the interaction of all these factors.

In spite of its limitations, physical science admits of a degree of certainty which the social sciences are unable to attain. Although we cannot arrive with certainty at the precise position and velocity of an electron, we can be quite sure about its mass and charge; whereas in economics, the very notion of value is deeply problematic. The value of the most material of objects – a piece of land at Rockefeller Center in New York City, a home in Beverly Hills, an ounce of gold or a currency note – may be subject to such rapid, drastic and unpredictable fluctuations that it sometimes defies imagination, let alone prediction. The price of gold has doubled in the last two years. Between 2002 and 2008, the price of oil rose four-fold. Mass production may be able to predict with great certainty the speed with which a product can be produced, but value added measures cannot accurately predict market value or the interval before a product becomes obsolete. If we are unable to arrive at an objective value for a physical object, how much greater is the challenge to assign absolute value to wealth, welfare and progress – terms which vary widely over space and time? The utility of a fur coat or an air conditioner depends very much on the climate you live in. The value of a rare painting or priceless designer dress depends very much on who you are. Perhaps the difficulty is that we are attempting to define an inherently subjective condition in purely objective terms.

Uncertainty is a fact of life. Yet, as it presents itself to us it appears to have two apparently opposite and contradictory characteristics. On the one side, it appears to be the source of the anxiety and insecurity from which humanity progressively seeks to escape. On the other, it appears to be the source of unimagined opportunity and creative potential. Uncertainty provides the raw material for humanity's searching, aspiring, seeking, imagining, creating, discovering, developing, inventing and innovating, the very acts which set us apart and above other species. Uncertainty is a creative cauldron out of which every new discovery and accomplishment emerges. Our efforts to limit and circumscribe uncertainty, as if it were a finite realm, are the source of humanity's greatest achievements, as agriculture was invented to overcome the uncertainty of nature's bounty. Diplomacy in the conference room is an effort to eliminate the destructive uncertainty of war. Law and social custom were invented to provide common rules for interactions between people. Democracy is a system intended for orderly decision-making among people with diverse interests, perspectives and values. The market is a social organization designed to efficiently match buyers and sellers in the otherwise teeming, chaotic uncertainty of commercial life.

The challenge is not to abolish uncertainty, for only death is for sure. The challenge is to find ways to creatively harness the potential of uncertainty and harvest greater security, wealth and well-being from its grasp. Historically, uncertainty has always been an undeniable fact of life – as it was during the long agrarian epoch and since the beginning of the Industrial Revolution, but it assumes an even more central character and significance in the modern service economy that is emerging, which we explore in the next section.

10. Service Economy

The emergence of the modern service economy is a natural consequence of the evolution

of manufacturing during the 19th century. As the production technology of the Industrial Revolution increased in complexity, the knowledge, expertise and auxiliary services required for design, development, research, manufacturing, testing, maintenance, after sales service and waste disposal increased disproportionately.

Advances in the application of scientific knowledge drove this process of increasing sophistication and complexity. Research and development strove to identify and develop ever newer, cheaper and better quality materials, machines, production processes and products. Thus, over the past century industrial and commercial research functions have grown to involve tens of millions of workers.

While the greatest challenge of the 19th century was increasing supply through higher, more efficient production, the greatest challenge of the 20th century became developing the markets capable of absorbing the increased production volumes and ensuring satisfied customers who would return to buy again. Advertising, distribution management and after sales service became crucial.

While unskilled workers could quickly learn how to perform most functions on the early assembly lines, over time the levels of worker education and skill increased enormously. This required a change in the composition in the workforce of industrial enterprises, a progressive shift from manual labor to trained technicians, engineers specialized in a wide range of subjects, systems developers and analysts, planners, financial, sales and marketing experts. A more educated, higher paid workforce also necessitated greater knowledge and specialized expertise in organizing, managing, motivating, training and developing people.

As firms grew from privately-owned and managed local businesses into regional, national and multinational, publically-owned corporations, the financial expertise needed for raising capital, managing costs, pricing products, negotiating supply and marketing contracts, taxation, dealing with banks and financial markets multiplied.

Topping off these diverse functions was the increasing need for general organizational expertise to manage, coordinate and integrate activities for procurement and production planning, inventory management, strategic planning, new business development, legal services, community, government and investor relations. While Henry Ford is credited with first applying the principles of mass production to automotive manufacture, it was Alfred Sloan at General Motors who introduced the decentralized, multidivisional organizational structure that enabled GM to lead the global automotive industry for eight decades.

The same requirement for a diverse range of specialized services arises at each level of manufacturing from raw material extraction and processing through the multiple stages of component production, subassembly and final assembly, whether carried out within a single firm or by hundreds of different firms in the supply chain.

Thus, throughout the 20th century, the functions associated with production technology (R&D, product design, quality control and manufacturing engineering), organization, human resource management, sales and marketing, and financial management became increasingly important determinates of business success and economic growth. Few of these functions were directly involved in actual manufacturing, yet all of them became essential services without which basic manufacturing could not be undertaken or sustained. In other words, as

it became more sophisticated, industrial enterprises progressively transformed themselves into service organizations, which also performed manufacturing functions. Thus, we find today that the vast majority of employees in traditional manufacturing firms are engaged in performing service functions.

What occurred within industrial enterprises also occurred in the economy-at-large. A huge infrastructure of service-related social organizations emerged, specialized in countless sub-fields of expertise to support expanding industry – government administration, education and training, scientific research, employment, financial, marketing, legal, transportation, logistics management, communication, waste disposal, recycling, banking, insurance and financial services – until these rapidly growing service functions became the dominant driving force for the expansion of the entire economy. The development of the Service Economy is best conceived of as a global process involving the whole economy, in which service functions are integrated into all productive activities, rather than simply the growth of a tertiary sector beyond agriculture and manufacturing.

Simultaneously, the higher productivity, wealth generation and living standards resulting from the evolution of manufacturing stimulated the growth of another range of services designed to meet the growing needs and aspirations of a more prosperous population. The economy developed a second powerful engine, the engine of growing consumer demand. To meet the demands generated by higher levels of prosperity, services related to retailing, travel and tourism, communication, information, education, healthcare, banking, investment, and insurance, legal and other professional services, food and hotel services, media, entertainment, and recreation also expanded exponentially.

Our very conception of what constitutes a basic need changes as society advances. Engel's law states that services are secondary in most cases because they fulfill only non-essential needs. Before and during the Industrial Revolution, only food, shelter and clothing were considered primary. Today that is no longer the case. Education, healthcare, financial services, computers, internet, and entertainment have become an integral part of modern life, without which it is difficult to survive socially and succeed economically. Services represent the vanguard of emerging social needs and have become essential means for promoting the wealth of nations.

The combination and convergence of these interdependent movements have given rise to the modern Service Economy which we know today. Services now account for 64% of global output and more than 70% of employment in OECD countries.¹⁰ These figures underestimate the contribution of services, since in many cases they fail to take into account service functions and employment within manufacturing industries. The cost of growing tomatoes represents only two or three percent of the sale price of a bottle of tomato sauce. The cost of producing and assembling an individual automobile represents only about 20 to 25% of its total cost. This shift to a service economy necessitates a fundamental change in the way value is measured.

11. Measuring Value in the Service Economy

At first glance it may not be apparent how or why the proliferation of service functions should alter in any fundamental way the inherent nature of economic value. But a closer ex-

amination reveals that it has profound implications for economic theory and economic measurement. The economic theory and measures of value posited by classical and neo-classical economists were based on the premise that manufacturing is the dominant source of wealth creation. The Industrial Revolution made plentiful many products that were previously either very scarce or very costly. Between the 1780s and 1860s, mechanization reduced the cost of cotton cloth to just 1% of its earlier level.

Therefore it was assumed that any augmentation of production constituted a net increase in wealth. Measuring increases in the monetary value of output, i.e. the flow of production, was regarded as an adequate measure of increasing wealth, i.e. the total stock of economic value. This assumption proved overly simplistic. It failed to take into account the depletion of physical and biological assets (D&P) that occurs during the production process. Overlooking the complex relationship between physical, biological, social, human and financial forms of D&P, it concluded that an increase in the accumulation of financial capital is synonymous with an increase in overall wealth. Some forms of economic activity, such as bottling drinking water, waste disposal and environmental clean-up represent efforts to compensate for the negative aspects of economic activity, rather than net additions to wealth. In addition, it ignored the concept of negative value or value deducted, the fact that some economic activities such as war or extracting non-renewable resource, may destroy or consume rather than generate wealth.

The growth of the modern service economy adds to these deficiencies another and more fundamental problem of measuring wealth – the problem of time. The problem arises from the difficulty in precisely assigning economic value to either a manufacturing or a service activity at the point of sale and delivery. The Industrial Revolution gave rise to measures of the increase in the economic value of the flow of production through various stages of manufacture, assuming that the production process was complete the moment a product or tool was available for sale on the market and that all costs associated with its manufacture contributed positively to wealth-creation. This assumption seemed logical and consistent at the time. Firms purchase raw materials at a given price, process them into manufactured goods, package and deliver them to customers. At that point the transaction is complete and all the costs can be known. Thus, calculating the gross national product at factor cost became a standard measure for production and wealth-generation in a monetarized, manufacturing-based economy.

12. Utilization Time & Utilization Value

Today this concept is no longer adequate. Even in manufacturing, the true cost of a product often depends on its effective performance (value) during a prolonged period of utilization. After-sales service, waste disposal and product liability have become major cost factors even for manufacturing companies, factors which cannot be accurately known at the time of production or sale. This fact was dramatically illustrated by Toyota's worldwide recall of more than nine million vehicles in 2009-10 – equal in quantity to 90% of total light vehicle sales in the USA in 2009 – which cost the company and its dealers upwards of \$4 billion, a cost which was not known and could not be reliably estimated at the time of sale.

Tracing the process back in time to the beginning of the design and production cycle, today the costs incurred in the development of manufactured products commence long before a

new product ever reaches the production line, even in instances when the product is never actually produced. The costs associated with research and development, testing and prototyping can be many times greater than the direct cost of manufacturing the product. Pharmaceutical companies, for example, spend billions of dollars annually on medical research to develop new products. The average development time for a successful drug is about 12.5 years. The actual cost of materials and processing to manufacture patented prescription drugs typically represents only five percent of their final sale price. The high cost of that research also results from the fact that the cost of a great many failed research projects has to be amortized against the few successful products that emerge from R&D and come to market. Less than one in a hundred new ideas reaches clinical trials and fewer than 10 percent of these are approved for sale. Of every 250 drugs that enter preclinical testing, only one is approved by the US FDA. Thus, a true measure of value would have to take into account the entire range of costs incurred during the entire lifetime of a product prior to, during and after production.

The evolution of the Service Economy necessitates a change in the fundamental notion of value. When it comes to services, taking into account the costs incurred during the full period of utilization is still not sufficient to arrive at an accurate notion of economic value. Cost, even comprehensive and inclusive cost, is an insufficient index of real contribution to wealth. We need, instead, a wider concept that also takes into account utilization value.

Utilization value refers to the use value of the assets created (stock), rather than the notion of added value (flow). The value added measurement of mining for scarce natural resources considers only the monetarized costs of the activity (flow), but does not fully reflect the reduction in the overall stock of physical D&P associated with the consumption of an irreplaceable resource. The cost of a product does not tell us how long or how well it will serve the intended purpose. The US construction boom that resulted from easy bank credit in the middle of the last decade leading up to the subprime mortgage crisis resulted in a massive increase in the number of residential and commercial buildings, many of which have never been occupied since their construction. People were employed, materials were consumed, but has national wealth really been augmented by this activity, if the buildings themselves are never utilized? What is the true value of a computer or mobile phone or a technical education that is soon outdated and obsolete?

Common sense tells us that our real wealth and welfare depends on the use value we derive from the products and services we acquire and that this use value in turn depends on the period over which they can be utilized. This is true of products as well as services. But as we shall see, in the case of services, utilization value assumes paramount importance.

13. Valuing Uncertainty and Systemic Risk

Economic activity in the modern Service Economy is closely related to the performance of integrated systems. This is true even for manufacturing activities. Products are conceived, designed, engineered, produced, sold, serviced and disposed of by means of systems which are integrated with countless other systems within and outside the manufacturing firm – systems for research, testing, training, monitoring, communicating, transporting, warehousing, servicing, etc. The product no longer exists as a stand-alone discrete unit. It exists as part of a system, like a computer periodically in need of service. This has been true

since the introduction of mass production, but it is far more important today. While the cost or value of a discrete product can be estimated at the point of sale, the cost or productivity of the system can only be measured in terms of its performance relative to the entire cycle from conception through production and delivery to final disposal.

While the industrial economy attributes value to products which exist materially and are exchanged, value in the Service Economy is highly dependent on the functioning of result-producing systems, such as systems for delivery of education and medical care. The reference for value is not to the “product” but to the utilization and usefulness of the system. Increasing productivity in the Industrial Economy is measured by the cost of the inputs used for producing products or tools; whereas attempting to measure productivity in the Service Economy by the cost of inputs without reference to specific performance is very close to nonsense. The productivity of a healthcare system depends on its capacity to cure illnesses or maintain a healthy population. The salaries of teachers or investment in school buildings cannot suffice as a proper measure of educational productivity. Assessing the productivity of an educational system needs to be based on an evaluation of the quality of learning by those who pass through it. Thus, while Industrial Economy evaluates the production of wealth in terms of added exchange value, wealth in the Service Economy is a function of utilization value.

This is evident with regard to services such as telecommunications, education, healthcare and financial services. In each of these industries, services are typically delivered over long periods and only a small portion of the cost is associated with the actual delivery of a specific service at a specific moment. The marginal cost of a single phone call is virtually zero, provided that the service depends on the existence of a massive infrastructure of telecommunications equipment, on which the investment and maintenance are nearly independent of the amount of usage. So too, the delivery of educational, medical and financial services depends on a huge infrastructure of schools, hospitals, banks, instructors, physicians, financial experts and administrative personnel. Each of these services forms part of an integrated system, linked with other social systems. In all these instances, the major cost is the cost of establishing and maintaining the system, regardless of the extent to which it is utilized. But its value, its real contribution to wealth and welfare, depends entirely on the extent of its utilization and the usefulness or quality of the service delivered.

Furthermore, in the purchase of services the buyer is primarily concerned with performance over a period of time. This is where risk and uncertainty become crucially important factors. Because a system must operate reliably over time, full evaluation of a system cannot be carried out before or at the specific time of service delivery. It can only be assessed by how the system functions in real time in the dynamics of real life. Whenever real time is taken into consideration, the degree of uncertainty and the probability become central issues. Will our mobile or internet service provider deliver reliable high speed bandwidth all hours of the day and days of the week? Can we obtain emergency services from our healthcare provider anytime and place as we may require? Does the manufacturer of our computers provide on-site service within 24 hours?

Cost in manufacturing is typically measured at the stage up to the point of final sale, whereas in regard to services the actual cost of full delivery may not be known until long after the sale. Because of the extended period of utilization time, the true cost over an extended

period of utilization is in most cases not a fixed quantity, but a probability that depends on future events. The utilization value is probabilistic, rather than deterministic. It involves new types of risk and far greater degrees of complexity, vulnerability and uncertainty.

The probabilistic nature of economic value is dramatically illustrated by the recent subprime mortgage crisis in the USA. Between July 2007 and June 2008, rating agencies lowered the credit ratings on subprime mortgage securities by \$1.9 trillion. Bad policy and business decisions based on valuation errors occurred on an inconceivable scale. Residential properties in the US declined in value by more than \$5 trillion or 32% in a single year. The value of retirement assets and other investment assets dropped by more than \$8 trillion. Huge as it is, these losses pale into insignificance when compared with the potential risks of climate change. Both the costs and inherent uncertainty associated with the future impact of carbon-generating industrial activities may be of an order of magnitude higher.

Uncertainty and systemic risk inherent in the modern service-based economy may extend long after the date of sale, throughout the entire life cycle of utilization and even disposal, as the Toyota recalls illustrate. This view challenges the fundamental notion of price based on the equilibrium between supply and demand as an adequate measure of value. And it goes to the heart of the question, ‘What do we really mean by value?’ The ingenious device of equating price with value has served as the basis for the entire development of modern mathematical economics as a science, yet all the major objections to GDP as an indicator of human welfare and well-being point to the inadequacies, gross distortions, disastrous policy measures and catastrophic consequences that can arise from implicit faith in this equation. This perspective highlights the essential linkage between theory and measurement. It reinforces the need for more fundamental reassessment of economic theory as proposed in “Introduction to a Program for the Wealth of Nations Revisited”, published in the first issue of *Cadmus*.¹¹

Any system operating to generate some future result operates under conditions of risk and uncertainty. To understand the inherent uncertainty associated with contemporary economic activity, a distinction needs to be made between two essentially different kinds of risk – entrepreneurial and systemic. Entrepreneurial risk is a characteristic of all commercial activity arising from the decisions and actions of those involved. But a major portion of the risks associated with the operation of the Service Economy and human security in contemporary society are systemic in nature. Systemic or pure risks arise primarily from vulnerabilities in the social and physical environment, rather than from the actions of the affected individuals. Hurricanes, tsunamis, bankrupt governments, recession, drought, political paralysis in Congress, and war are instances of macro level systemic risks. But the same type of risk exists at lower levels as well. The highly systemic nature of modern economic systems and the increasing technological complexity of its components necessitate an ever deeper economic understanding and control of the vulnerabilities of these systems.

The terms risks and vulnerabilities can generate a fatalistic feeling of anxiety, helplessness and paralysis. But they represent only one side of uncertainty. On the other lies the unstructured potential from which social creativity continuously throws up new opportunities. Far-sighted entrepreneurs, such as Steve Jobs, learn to perceive the opportunities as well as the challenges arising from very rapid technological change and other sources of uncertainty that emerge from this uncharted realm – opportunities for defining new directions, for

inventing and stimulating new products and types of activity in the quest for real economic growth and social progress.

The urgent quest for greater security and certainty is a prominent characteristic of our age. This is partly due to the fact that people are living longer and must make provision for their maintenance during a prolonged period of retirement. It is also partly due to the fact that our expectations of security have risen dramatically in recent decades with the evolution of the modern welfare state, social security, medical insurance, unemployment insurance and other forms of protection. Since the end of World War II, a silent revolution in social welfare has spread throughout the world. Peter Drucker referred to it as the “unseen revolution” and “the American way to socialism”. Today social security expenditure in Western European countries accounts for more than 20% of GDP.¹² Education alone accounts for 5.5% of GDP in the USA. This trend represents a change in social values and an attempt to manage the vulnerability of individuals to systemic risks.

14. Insurance

Insurance is an obvious example of the probabilistic nature of cost and economic value. Hurricane Katrina is estimated to have cost upwards of \$200 billion, including \$120 billion in insured catastrophic losses. In addition, we should add the significant increase in the cost of home insurance that affected all US homeowners in the years following the disaster. The true cost of the recent tsunami and the nuclear accident at Fukushima may not be known for many years. Human error can be as costly as the most violent acts of nature, as in the case of Kweku Adoboli, a trader in UBS’s risk management division, whose actions recently cost the bank \$2 billion.

More than any other industry, insurance illustrates the enormous untapped potential of the emerging service economy as well as the compelling need for redefining basic economic notions of value and wealth. Traditionally classified as a component of the tertiary sector and non-essential need, the role of insurance in modern life has become so vital that it is virtually indispensable. The worldwide insurance industry, which makes up a prominent portion of the service sector, has grown twenty-fold, from \$21 billion in 1950 to \$4.3 trillion in 2008.¹³

A multitude of studies in OECD and developing countries have documented a significant long-run causal relationship between the growth of the insurance sector and growth of GDP. A study of 55 industrialized and developing nations by World Bank between 1976 and 2004 found a positive and significant causal effect on economic growth related to both life and non-life insurance.¹⁴ These studies confirm that insurance is an agent, and not just a by-product, of growth.¹⁵ A well-developed insurance sector is essential for managing the risks and vulnerabilities associated with the functioning and development of every modern economy. It provides long-term funds for physical and social infrastructure, while simultaneously strengthening risk-taking abilities. It facilitates trade and commerce, mobilizes savings, supports loss mitigation and fosters more efficient capital allocation. The contribution of the insurance sector to economic development is positive and exhibits a long-run equilibrium relationship.¹⁶ Another study of 77 countries from 1994–2005 found a 1.7 percent increase in economic growth for each one percent increase in life insurance density and a 4.2 percent increase in economic growth for each one percent increase in non-life insurance density.¹⁷

As for the society, so for its individual members. The quest for certainty and security is a fundamental human aspiration and an essential component of wealth and welfare. Yet in spite of enormous social progress during the past two centuries, both uncertainty and insecurity are ever present threats. Soaring levels of unemployment, skyrocketing healthcare costs, longer retirement periods due to increasing longevity, collapsing home prices and wildly fluctuating stock and bond prices are just a few of the many ways in which uncertainty and insecurity continue to impact on individuals and families. They combine to make insurance a primary need for human security and for welfare in contemporary society.

Insurance is a novel social organization devised to promote far higher levels of security and certainty for individuals by spreading the risks over a large population. It is perhaps the clearest example of the economic potential for transforming uncertainty into economic value. In spite of the high growth rates of the insurance industry globally in recent decades, the untapped potential for increasing existing types of insurance is far from saturated. An even greater potential contribution to wealth, welfare and human security can be achieved by extending the principles of insurance into fields where it has not yet penetrated. Creative methods of adopting insurance to education can dramatically accelerate the rise in general levels of education. Innovative insurance programs can encourage talented employees to become entrepreneurs, thereby creating jobs for others.

15. Measuring Wealth and Riches

A fundamental flaw in the prevailing measures of economic growth and national wealth is the implicit assumption that all monetarized economic activity adds to the total stock of national wealth and that this is the sole or primary determinant of the wealth of nations. Since the time of Adam Smith, the value added to national wealth is taken to be equivalent to the sale price of all products, which normally includes the cost of manufacturing and marketing them plus a margin of profit. Thus value added forms the basis not only for measuring the volume or flow of all economic activity as commonly measured by the gross domestic product, but it is also taken as equivalent to the net addition to national wealth. The implicit assumption is that all monetarized activity represents growth and all growth represents additional wealth.

Classical economists, in particular Ricardo, were well aware that the methods employed to account for economic wealth were not comprehensive of the real level of wealth of an individual or a country. Ricardo made a distinction between riches and wealth, one a measure of a person's capacity to command necessities and enjoyments he seeks and the other, a measure of the value added cost of what is produced. Riches may increase as a result of an improvement in technology that lowers the cost of production, a circumstance in which wealth may decline due to the lower selling price of the product. These distinctions were considered secondary because the main problem during the Industrial Revolution was to identify the most dynamic system for increasing the wealth of nations via the industrialization process. Later economists were strongly influenced by this first formulation of economic theory. Thus, the value added flow of goods became the principal means of assessing wealth.

In the Service Economy, where the industrialization process per se is no longer the prime mover for increasing the wealth of nations, the problem is quite different and the contradiction between wealth and riches much more important. The divergence of the notion of riches

from the notion of wealth is associated with what may be called deducted values. Deducted values are associated with the consumption of economic resources by activities that do not add to the real level of wealth or riches, but which add to the costs of the economic system. The rising cost of mining for oil or minerals from deeper in the earth adds to the value added calculation of production, but adds nothing to the real wealth and welfare of society. Rather the excessive exploitation of these resources diminishes real wealth by reducing the stock of resources available for future consumption.

Part of the problem arises from the confusion between economic activity and wealth. Value added is a measure of activity, a flow, whereas wealth is a measure of the total stock of economic value. Current accounting methods fail to take into account the negative impact of monetarized economic activity on forms of D&P, including both human and ecological resources. In recent decades we have seen that the negative impact of economic activity on natural D&P may in some instances exceed the total value added of monetarized activity or even undermine the natural systems which sustain our lives. The same thing is happening today as a result of large scale unemployment and underemployment in OECD countries, which most severely impacts on youth. Total unemployment and underemployment in USA, including discouraged job seekers and people who work part-time involuntarily is estimated at about 25 million people or 20% of total employment.¹⁸

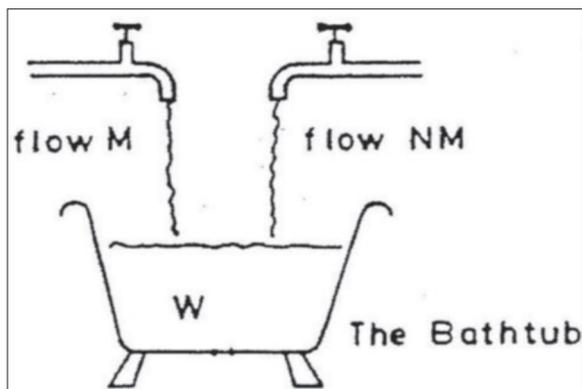
Such a system of accounting is equivalent to operating a business without a balance sheet showing its assets and liabilities. A clear picture regarding the performance of a business requires an analysis of the flow of activity reflected in the profit and loss statement, as well as an analysis of changes in its total assets and liabilities. A well-endowed company might conceivably continue operating at a net loss for years on end without visible indications to the outer world; by depleting the entire stock of capital invested or accumulated in the past or by borrowing more and more money it will be unable to repay in future. It is only when we take into account the net stock of assets that we can determine the real level of wealth generation over longer periods of time.

Furthermore the classical notion of value neglects the contribution of non-monetarized activities to wealth and welfare, which may be equal or even greater in value than the monetarized flow. One need only imagine for a moment the impact of stopping all voluntary, personal assistance and health care services provided by family members, as well as all the unpaid work one presently does for one's own maintenance, to realize how essential these activities are to our overall welfare and well-being.

Figure 3 depicts the problem of measuring national wealth solely in terms of monetarized value added. The bathtub W represents the real wealth of the nation. The first water tap M represents the flow of monetarized wealth which is assumed to be a net addition to wealth, even when that flow involves remediation for pollution, the rising costs of increasingly scarce fossil fuels or emergency expenditures to recover from a hurricane, tsunami, nuclear accident or war. No distinction is made in this model between positive and negative value, between value added and value deducted. Note that the loss of wealth due to these catastrophes has never been deducted from the tub, but the amount spent trying to compensate for them is regarded as a net addition to wealth.

The second water tap NM represents the flow of non-monetarized, unpaid human activities, which make a fundamental contribution to real wealth and welfare, but are completely ignored by the current system of national accounts. Thus, if every citizen were to insist on paying someone else to perform even the most basic functions relating to their household and personal affairs, M would rise enormously, giving the impression that wealth has also increased enormously, whereas we would only be spending our accumulated savings or foregoing our leisure to work extra hours to pay others to do what we were formerly doing ourselves.

Figure 3: The bathtub of economic wealth¹⁹



Note that this system is also inadequate to measure net additions to wealth arising from technological advances. The average price of a personal computer today in constant dollars may be less than 20 percent of the price in the 1980s, but the speed, storage capacity and functional capabilities of the product itself are thousands of times greater. Similarly, the real cost of international telephone calls may average only one percent of the cost forty years ago, while the real cost of international air travel may have declined by 50 to 75 percent. Thus, while in some ways we have grown poorer in recent decades because we must pay for goods and services that were formerly free, in other ways our real wealth has increased far faster than incomes have risen and even in cases where real purchasing power appears to have remained constant.

Another limitation arises from the fact that many riches are conditioned by our location. Countries with cold climates will always need to develop more sophisticated heating systems than those situated in temperate and tropical zones. In colder climates, more monetarized activities are needed in order to provide artificial, man-made sources of heat that can be stockpiled for winter; whereas in warmer climates, more monetarized activity may be required to provide for artificial cooling. Value added costs in either case may be higher than in the temperate regions in between. Which type of country is richer and which poorer, those that have to spend a lot of money on heating and cooling or those which have no expenditure at all on climate control?

The limitations of the accounting system we have inherited from the Industrial Revolution are nicely depicted by the paradox of heaven and hell applied to the notion of scarcity.

In heaven, nothing is scarce because everything is free. Since everyone is satisfied with what they receive, there is no need for economic activity, prices or transactions, which means there is no value added, no GDP and consequently no measure of wealth. In hell, everything is scarce and highly valued and lots of energy is consumed to manage human resources, which means that the value added and GDP derived from obtaining the most basic of necessities for survival are very high, as is the case during war-time rationing. Thus the paradox that less scarcity leads quite naturally to less economic monetarized wealth. The more we acquire all the necessities and enjoyments we seek, the less adequate the current notion of value is for reflecting our progress.

The current system no doubt offers considerable advantages for measuring short term changes in economic activity. The problem arises because economic growth as measured by net value added and GDP is commonly mistaken for a net addition to national wealth and economic welfare. Numerous alternative systems that attempt to measure the real stock of wealth have been proposed, but such measures can only be approximate and will be partly subjective, akin to the estimated goodwill in a company balance sheet.

The choice in future may well be between a system of flow measurement which is quantitatively precise but increasingly devoid of significance, and systems of asset measurement which might be less precise but will be more relevant to the real world. The quantification of non-monetarized wealth components can be achieved through adoption of a multiplicity of indicators. Even problems related to differences in location, climate and life style can be resolved. After all, there are already economic indicators such as the consumer price indices, which are not identical for all countries, designed to take into account differences of this type. This is a crucial topic, as any method of asset accounting would also make possible a better definition of riches and poverty. Such measurements can include indicators that have been developed in many sectors and for many purposes over the past half century. Yet without the context created by new economic theory, there can be no consensus as to the definition of these indicators, nor can they be given the significance and status they require to become efficient instruments to promote human security and the real wealth of nations.

The transition to an economic system and theory which go beyond the traditional notion of economic (added) value requires acceptance of a degree of uncertainty with regard to our measures of wealth and progress. This uncertainty stems from the fact that the very question of what wealth should be entails defining certain goals and expectations. Our conception of wealth will always be a relative construct, a function of time and evolution of society. For this reason, new measures may never arrive at a reliable notion of wealth, but even if we cannot define it, we will know it when we see it. It will be a world in which the capacities of every human being have an opportunity for development and gainful employment; a world in which everyone has the necessities of life – not only the necessities for mere physical survival, but also the modern necessities for human security and development; a world in which we do not pillage the earth and rob future generations for present enjoyment. Having come this far over the last ten millennia, the last two centuries and, especially, the last five decades, surely there must be a way to get there. Having learned how to progress so rapidly, surely it need not take a long time to arrive. But we need a new roadmap, for present economic theory and measurement do not and cannot tell us how to get there.

16. Conclusion

With all its limitations, is it not wiser to accept the traditional notion of value and a simple system for measuring it which has served us fairly well in the past? Alas, it is a matter of evolution. Hunting and gathering served humanity fairly well at one time, as did traditional forms of agriculture, monarchies, city-states, handwritten books, handmade shoes, the horse and carriage, telegraph, LP records, silent motion pictures, typewriters, VCRs, landline telephones and countless other remarkable inventions and social innovations. But had we been satisfied with any of them, we could not today enjoy a fraction of the comforts, conveniences and security that modern life affords. Had we not learned how to raise agricultural productivity, Malthus' prediction would have certainly come true.

The problems humanity confronts today suggest that it is time to move on, to move forward. The severe strain being placed on the natural environment is one indication that old concepts and old measures no longer suffice. Rising levels of unemployment, ever increasing levels of inequality, social tension and unrest point to the same conclusion. We see the effects all around us, but our science and our numbers assure us everything is perfectly alright.

Moreover, the process of social evolution we have been tracing has not reached an end or conclusion; it is only our outdated conceptions, attitudes and values that have exhausted their utility. We have organized production to perfection, but left out the most crucial ingredient – humanity. We have raised the value of GDP phenomenally, but overlooked the value of human security. The process of society's past evolution offers hope and assurance that there is a better way and a better life for all humanity waiting to emerge. Human-centered economic theory and measures of wealth, welfare and human security can help us realize it now.

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Real Economies and the Illusions of Abstraction

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The yawning gap between the real world and the discipline and profession of economics has never been wider. The ever-increasing abstractions in finance and its models based on “efficient markets” and “rational actors”: capital asset pricing, Value-at-Risk, Black-Scholes Options Pricing have been awarded most of the Bank of Sweden prizes since they were founded in the 1960s and foisted onto the Nobel Prize Committee. Most of these abstract models, based on misuse of mathematics, contributed to the financial crises of 2007-2008. Now, the family of Alfred Nobel, led by lawyer Peter Nobel, has disassociated itself from the Bank of Sweden Prize in Economics In Memory of Alfred Nobel.¹ * They point out that Nobel never would have approved of a prize in economics since it is not a science – and would have disapproved even more that most of the prizes were given to Western, neoclassical economists using mathematized, abstract models – far from Nobel’s wider concerns.

Nowhere is this abstraction more devastating than in the mathematical compounding of interest rates on borrowed money, now sinking individuals, companies and nations in unrepayable debt as explored in lawyer Ellen Brown’s Web of Debt (2007).

In The Politics of the Solar Age (1981, 1988), I warned that compound interest violated the Second Law of Thermodynamics:

“Much confusion arises because economics inappropriately analogizes from some of these models from the physical, social, and biological realms. For example, the best example of a “runaway” can be found in the hypothetical model that economists have imposed on the real world: compounded interest. Here, they have set up an a priori, positive feedback system (based on the value system of private property and its accumulation), in which the interest earned on a fixed quantity of money (capital) will be compounded and the next calculation of interest added on cumulatively. But this “runaway” accumulation process bears no relationship to the real world – only to the value system. However, it has profound real-world effects if enough people believe it is legitimate and employ lawyers, courts, etc., to enforce it!” (p. 228)

I also pointed out that Frederick Soddy, Nobel laureate in Chemistry, decided that economists’ dangerous drift into pseudo-scientific abstraction must be halted before they destroyed industrial societies, because their uninformed ideas contravened the first and second laws of thermodynamics. (p. 225)

* See <http://www.ethicalmarkets.com/2010/10/22/the-nobel-family-dissociates-itself-from-the-economics-prize/>

The mathematical fantasy that money is wealth and can reproduce itself is revealed again in the US housing and foreclosure crisis. Money is a useful information system for tracking our use of nature's resources and scoring the games we humans play, but it gradually became mistakenly equated with the real wealth of nations. Similarly, too often economists and politicians describe money flows in economies as analogous to the human body's circulatory system. Yet human blood's hemoglobin cells do not charge money or interest for the life-giving oxygen they deliver to every other cell in our bodies.

Charging interest for lending money was frowned on by our ancestors and considered a sin in Christian, Judaic as well as Islamic and other religious traditions. This view survives today in Sharia finance where lending at interest is shunned in favor of requiring the investor or creditor to share risks of any enterprise with the entrepreneur.

Generations of scholars since Aristotle's treatises on "just prices" have examined the myths and human experiments in creating money and systems of exchange, from mutual fund manager Stephen Zarlenga's "The Lost Science of Money" (2002) and Prof. Margrit Kennedy's "Interest and Inflation Free Money" (1995) to lawyer Ellen Brown's "Web of Debt" (2007). In my "Creating Alternative Futures", I posed the question: Is there any such thing as profit without some equal, unrecorded debt entry in some social or environmental ledger or passed on to future generations? My answer was "yes," provided all costs of production were internalized and thermodynamic, not economic, measures of efficiency were calculated.

The mismatch is between the real-world economies, where real people grow food, make shoes, clothes, shelter and tools in real factories, versus the human mind's tendencies toward abstraction. Understanding the real world in which we live requires us to recognize patterns and to abstract reality into mental models. The map is not the territory, as we have been reminded by many epistemologists. The danger is that we routinize our perception through these models, forgetting the need for constant updating and course-correcting as conditions change around us. Thus our mental models are memes that crystallize into habits, dogmas and outdated theories such as those in conventional economics and finance. These led to collective illusions: about "efficient markets," "humans as rational actors" and the lure of "compound interest" that still guide the decisions of too many asset managers. New models of triple bottom line accounting for Environmental, Social and Corporate Governance (ESG) have been adopted by responsible investors and institutional investors, including those engaged with the UN Principles of Responsible Investment, managing \$22 trillion in assets. The current US mortgage and foreclosure mess provides a new teachable moment where we can re-examine the obsolete beliefs still at the core of economics and now refuted by physicists, endocrinologists, brain and behavioral scientists.²

The computerized efficiency of digitizing mortgages for rapid securitization in the Mortgage Electronic Registration System (MERS) is at the root of the foreclosure and toxic assets dilemma. We must examine how computers, when introduced into Wall Street, financial and housing markets, drove economic theories further into mathematization, led by the Arrow-Debreu modeling of national economies in the 1960s, beyond earlier attempts by Leon Walras. Bank of Sweden Prizes in Memory of Alfred Nobel were given to Arrow and Debreu and others for mathematical models inappropriately applied to economics and

finance.³ Similar mathematical models on which economists still rely, accept Arrow-Debreu's assumption of a process of "market completion" where markets could be extended to enclose ever more of the global commons: air, carbon emissions, water, forests, biodiversity, ecological assets and their productivity which supports all life. The newest commons are global communications infrastructure, the internet, the electromagnetic spectrum and space, all of which require massive public investments and underpin global finance and its extensive bailouts. The report of the Global Commission to Fund the UN, "The UN: Policy and Financing Alternatives", proposed taxing all commercial uses of the global commons and fines for misuse, including a tax on currency speculation.⁴

For any market to efficiently allocate resources, buyers and sellers must have equal information and power, while their transactions should not harm any innocent bystanders. These conditions identified by Adam Smith in "The Wealth of Nations" in 1776 are now violated everywhere due to the scale and technological reach of global corporations and finance. Examples include the earliest forms of industrial pollution and exploitation of workers to today's toxic sludge dam failure in Hungary; BP's Gulf oil contamination and the growing costs in lives and ecological destruction of coal mining; the Wall Street volatility due to program trading; the financial meltdown of 2007-2008; the May 6, 2010 "flash crash," and the new revelations of US mortgage and foreclosure frauds. An ingenious enterprise, the Open Models Company (OMC) founded by Prof. Chuck Bralver at the Fletcher School of Tufts University, based on Linux principles, provides an open-source platform for global experts and critics in finance to examine the assumptions underlying derivatives and risk models – a huge help for underfunded regulators.⁵ Mervyn King, head of the Bank of England, called for restructuring beyond Dodd-Frank, Basel III and other recent reforms of today's unsustainable "financial alchemy."⁶ King reflects most of the issues identified by experts in our Transforming Finance statement of September 13, 2010.*

The scale of industrial and financial operations becomes global and ever more computerized and digitized, accelerating the abstraction of management, global supply chains, risk assessment, calculations of accountants for profits and losses, strategies of national governments and central bankers using defunct models such as NAIRU (non-accelerating inflation rate of unemployment) to set interest rates, along with subsidies, tax policies, and quantitative easing to "manage" their economies. All are based on levels of aggregation in statistical indicators akin to assessing national economies while over-flying a country's territory at 50,000 feet. The digitization of Wall Street and security analysis is cancelling out strategies for diversification of portfolios. In the post-Bretton Woods turbulent global casino, the \$3 trillion plus daily electronic trading of currencies and sovereign bonds are driven largely by speculation, credit default swaps, and high-frequency trader's algorithms. The proliferation of electronic trading platforms, credit cards and digital payment and credit systems bypass regulatory models of governments and central banks.

Today's ad hoc global financialization cannot be described as a system since it is still driven by the long-outdated assumptions and models in economics and the sloppy generalizations and categories that underlie economics and its theories: "capital" (not clearly defined); "growth" (GDP is the output of goods and services measured in money without

* See <http://www.ethicalmarkets.com/2010/09/12/transforming-finance-groups-call-recognizes-finance-as-a-global-commons/>

subtracting social and environmental costs or adding the unpaid services in families and communities which support official paid production); “innovation” (does not distinguish between new brands of dog food, potato chips, credit default swaps vs. computer chips, gene sequencing or renewable energy); “productivity” (if measured as output per worker, this leads to further automation and technological unemployment); “free trade” (which led to the hollowing out of the US economy, outsourcing of jobs in manufacturing and services, trade deficits); “inflation” and “deflation.” Statistical illusions: CPI, “core CPI” (which excludes energy and food), drives Fed policies, Social Security, taxes as well as employment and macroeconomic policies.*

Perhaps the most obvious policy errors were the models used by Alan Greenspan to describe the global economy in the dot com boom and by Ben Bernanke during the period from 2003-2006 as “The Great Moderation” (economic cycles had been tamed) and then, as the global imbalances grew, labeling them “the Global Glut of Savings” (China, Japan and other countries supposedly saved too much). Instead, I and others labeled this a growing global bubble of fiat currencies, led by the US dollar, acting as a global reserve currency. The crisis was one of macro-economic management – sinking under mounting deficits, debt and compound interest, while facing growing systemic risks due to deregulation in the global casino.

Nassim Nicholas Taleb pointed out all these conceptual errors in “Fooled by Randomness” (2005) and “The Black Swan” (2007), digging even deeper into the fallacies of the human mind, including confirmation bias, herd behavior and excessive optimism verified by behavioral psychologists. Mathematician Benoît Mandelbrot warned of the limits of statistical models of probability and risk informed by Gaussian normal distribution “bell curves.” Fat tails, black swans and perfect storms entered the language, but instead of examining these human perceptual errors, they became excuses for Robert Rubin and his protégés, Larry Summers, Tim Geithner, as well as central bankers, Wall Street CEOs and asset managers – all claiming that “no one could have predicted the financial crises.” As Richard Bookstaber described in “A Demon of Our Own Design”, Wall Street’s financial models were bound to fail.

The truth is that thousands of critics, scholars and market players, including the author accurately predicted and warned of the coming debacle – but were ignored by the leading elites in business, government and academia.^{7, 8} Mainstream media accepted conventional wisdom, funded by advertising from incumbent industries and their financial allies while their lobbyists took control of Congress. After the half-hearted reforms of Dodd-Frank, the IMF, the World Bank, the BIS and the G-20, how can a paradigm shift allow new voices, new models and more accurate modeling and control of systemic risk to emerge in the global financial system?

First, we must recognize the crises we face are not black swans, fat tails or perfect storms, but symptoms of our limited perception, fragmentary reductionist mindsets, models, research methods and academic curricula, particularly in economics and business schools. Second, we must move beyond economics to capture all their “externalities” in multi-disciplinary frameworks, systems models, multiple metrics and pluralistic research, such as that pioneered by the US Office of Technology Assessment (OTA) on whose founding

* See <http://www.calvert-henderson.com/current.htm>

Technology Assessment Advisory Council I was honored to serve from 1974 until 1980. This useful messenger, with its ground-breaking research, now copied in many countries, was decapitated by Congress in 1996 by Speaker Newt Gingrich and his Republican colleagues. Luckily, OTA's studies are still highly relevant and archived at Princeton University and the University of Maryland. Signs of awakening include new memes, including describing fragmented approaches as "silos" and narrow research as "stovepipe information" with frequent calls to "connect the dots."

Equally urgent are the phasing out of all the hundreds of billions of dollars of perverse subsidies propping up obsolete, incumbent companies and industries still blocking the emergence of cleaner, greener information-rich technologies and new companies. Governments' conceptual confusion over climate issues is evident in still subsidizing carbon-based industries while at the same time trying to cap and price carbon emissions. This Green Transition to the Solar Age is underway as we gradually exit the earlier, fossil-fueled Industrial Era. Ethical Markets Media measures private investments since 2007 in solar, wind, energy efficiency, renewables and smart infrastructure worldwide in our Green Transition Scoreboard®.*

Meanwhile, a below 1% financial transaction tax on all transactions can curb high frequency trading and currency speculators, limit positions by hedge funds and other institutional investors – while sparing legitimate hedging by commercial firms. Such long-debated taxes proposed by James Tobin in the 1970s and Larry Summers in his 1989 paper are now supported by the EU and are on the G-20's agenda.^{9, 10}

To finally correct our money-creation ceded to private banks by Congress in 1913 through the Federal Reserve system, Congress could enact the Monetary Reform Act long proposed and vetted by seasoned market veterans of the American Monetary Institute. This would entail a rolling readjustment in money issuance – now obviously dysfunctional under the Fed and private banks, and return it to a public function as in the US Constitution. Meantime, many states could adopt state banking as in North Dakota, the only state with a surplus and full employment – unharmed by the depredations of Wall Street extractions from Main Street.†

I agree with others from E.F. Schumacher, author of "Small is Beautiful" (1973), Simon Johnson, author of "13 Bankers" (2009), Laurence Kotlikoff, author of "Jimmy Stewart is Dead" (2009) to Nassim Nicholas Taleb: if systems are too large and interconnected to manage and banks are "too big to fail," then they need to be carefully dismantled and decentralized to restore diversity and resilience following nature's design principles. Monetary monocultures now on a global scale have demonstrably failed. Healthy, homegrown, local economies need protection from global bankers and their casino. Complementary local currencies and peer-to-peer finance are flourishing.‡ Bloated financial sectors can be downsized and returned to their role of serving real economies. In the USA, small non-profit community development finance institutions (CDFIs) are growing to fill the needs of micro-businesses.¹¹

Trickle down economics has failed utterly, even as the politicians and central bankers still believe that pouring taxpayers funds and printed money into big banks and bloated

* See <http://www.greentransitionscoreboard.com/>

† See <http://www.ethicalmarkets.com/2010/01/08/escape-from-pottersville-the-north-dakota-model-for-capitalizing-community-banks/>

‡ See <http://www.ethicalmarkets.com/2009/03/31/democratizing-finance/>

financial sectors will somehow trickle down to Main Street and local businesses. Instead of creating US jobs, the rest of us see the Wall Street traders and big asset managers investing these funds in China, India, Brazil and other emerging markets where US multinationals have shifted their plants, jobs and research. Worse still, big banks take the Fed's funds and rather than lending to Main Street, use it for gambling on currencies, oil, interest rates and other derivatives. All this money-creation is fueling currency wars. Hopefully, all this together with ballooning debts, deficits and un-repayable compound interest, the foreclosure and mortgage securitization scandals and auditing Fannie, Freddie and the Fed, will provide enough evidence to Washington and voters in many countries of the needed paradigm shift and new policies.

Calls in the USA for facing up to these painful truths are coming from all sides, from Republicans including Congressman Ron Paul to Democrats including Congressman Dennis Kucinich and Independents including Senators Bernie Sanders and Byron Dorgan. Indeed, Republicans and Democrats are now both minority parties as most voters are now Independents.

Exposing all the statistic illusions, inoperative models, dysfunctional economic dogmas – including their unsustainable offspring: debt-based money and compound interest – can begin the Green Transition to the emerging economies of the 21st century. The new coalition is now visible: responsible and green investors and companies, environmentalists, Millennials, progressive labor unions and their pension funds, students, independent media and voters, systems thinkers, futurists and academics pioneering new courses in sustainability, as well as dispossessed homeowners, jobless workers, professionals and veterans eager to put their skills to work – all are ready to help grow the green economies of the future.

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The Moral Arc of History

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The arc of the moral universe is long but it bends towards justice.

– Martin Luther King, Jr.

1. One Tribe Becomes Many

Between fifty and one hundred thousand years ago, a small group of *homo sapiens* made its way out of Africa and established settlements in what we now call the Middle East. Over the millennia, we multiplied and spread across the whole earth. In response to variations in climate, one race became many.

As earlier hominids had done, we gathered and we hunted, preying on whatever and whomever we could. We also sought power and used our language and model-building skills to turn nature's power to our purposes.¹

Our forebears domesticated plants and animals, steadily improved their tools and weapons, and honed their fighting skills. By the time different tribes ran into one another, they no longer recognized they were all of one family. Other humans looked strange, sounded stranger, and made us afraid.

When facing enslavement or death, we used our martial skills to defend ourselves, or, if we had the advantage, to prey on others. All it took was one predatory tribe to drag others into the fight. Among the models we built, those pertaining to social organization and governance were especially important to the power we could mobilize. The nature of relationships within a group can either facilitate or undercut alignment around a common political purpose. Prosperity and solidarity, both so powerfully affected by institutions of governance, determine a group's capability to defend itself against other groups or to dominate them.

2. Power Rules

The "olden days" often seem rosier in hindsight than they did to people at the time. So, it's not hard to understand why, in the thick of the struggle for survival, the authors of Genesis conjured an Edenic paradise. We've been comforting ourselves with stories of bountiful origins ever since.

Archeologists tell a different story. In place of noble savages living in abundance and harmony, they give us a picture of "constant battles" driven by scarcity of food and resources.² Humans multiply quickly; our numbers can soon outstrip the food supply. The causes of conflict likely ranged from competition to survival in the face of dwindling resources to

dreams of empire. Life presented an endless series of choices that turned on kinship. Friend or foe? To embrace or exploit?

One choice sees strangers as lost relatives, the other as potential aggressors, or as prey. In the struggle for survival, “we” have just what “they” need—food, water, tools, territory, animals, child-bearers, manpower—and vice versa. If resources are scarce, appropriating those of other humans may be the only chance for survival, or it may simply recommend itself as a get-rich-quick scheme.

Once the choice is made to regard others as prey, the aim, if not to kill, is to subordinate and enslave. Far from being an aberration, slavery has been commonplace in history. Only in the nineteenth century was its legitimacy seriously questioned. Slavery continues to this day in overt forms (child-slavery and human trafficking), and in the indirect form of subsistence wages. As Reverend Jim Wallis has put it, “Poverty is the new slavery.”³

Of course, modern humans didn’t invent the predatory option. We absorbed it imitatively from our hominid ancestors, and before that, from apes whose internecine battles have been well documented.

To limit injury to self, we, like other predators, opportunistically target the weak. None of us would be here if our own ancestors had not been either relatively successful predators (or relatively good evaders of others’ predations).

Sari Nusseibeh, president of Al Quds University in Jerusalem and a descendant of an aristocratic Palestinian family, quotes his father as telling him, “All family dynasties can trace their histories back to some act of brigandage.” I have heard similar rueful admissions from the heirs of several American fortunes.

3. Hierarchy and Rank

We tend to think of rank as sanctioning abuse and exploitation, but, in its conception, rank served as a device for *regulating* predation within the group. By concentrating power in a “top dog” or a “king” and a ruling class, rank served to replace anarchic predation with regulated predation. Despite the privileges taken for itself by the aristocracy, this represented progress at the time.

Every human society, of any size and complexity, has employed hierarchical control. Not to do so was to fall victim to groups that did avail themselves of the superior organization afforded by the tools of rank and hierarchy. Law and order trump anarchy. In return for providing order, the ruler and the ruling class take a share of the fruits of the labor of those they protect from domestic and foreign predators. No wonder we’re wary of rank—it’s the linchpin of the archetypal protection racket. With a few notable, game-changing exceptions, benevolent lordship degenerates into malevolent dictatorship.

But, rank itself is not inherently evil, as evidenced by the occasional benign ruler: we admire, we even love, just, fair-minded authorities who serve the group and eschew personal gain.

When rulers violate the terms of the tacit contract they have with their subjects—by unduly exploiting them, self-aggrandizement, or by failing to protect them against external predators—indignities multiply, fester, and may lead to mutiny, rebellion, and revolution.

Over the long-term, the result is incrementally to reign in the powers of the governing class. Reforms that hold rulers accountable diminish rank's prerogatives and represent an extension of human dignity and human rights.

This paper does not go into the practical, tactical politics of how to secure dignity and rights, but rather tries to account for the long-term trend, heralded by Martin Luther King, Jr., towards greater justice. Detailed models of *dignitarian* organizations, as well as tips on how to win political support for them, are discussed elsewhere.^{4,5,6}

dignitarian (dig-ni-TĀR-e-an)

1. *Adjective. a condition in which dignity is protected, honored, and secure. In a dignitarian society, there are no nobodies, no degradation of others, directly or indirectly. Dignity is everyone's birthright, and is affirmed regardless of role or rank.*

2. *Noun. someone who regards dignity as an inalienable right of personhood, and conducts him or herself so as not to cause others indignity.*

Think of the examples that follow as milestones towards a world in which the opportunity for abusing the power entrusted to officials is reduced. In listing a few key figures and landmark events in the expansion of the circle of dignity, no attempt is made at completeness. This is merely a "starter" list, the purpose of which is to provoke readers to come up with their own nominations to the Dignitarian Hall of Fame.

4. Milestones on the Road to Universal Dignity

4.1 Monotheism

I believe in Spinoza's God who reveals himself in the orderly harmony of what exists, not in a God who concerns himself with the fate and actions of human beings.⁷

– Albert Einstein

In contrast to polytheism, where the various gods may be at odds with one another, a single god is presumed to have a comprehensive, unitary consciousness.

Monotheism is the theological counterpart of the scientist's belief in the ultimate reconcilability of apparently contradictory observations into one consistent framework. If God is of one mind, we cannot expect to know that mind until, at the very least, we have eliminated inconsistencies in our data and contradictions in our partial visions. This democratizes the search for truth by undermining the notion that the imprimatur of authority (e.g., the Church) is what makes a proposition true.

Monotheism is therefore a powerful constraint on the models we build. Our explanations must be free of both internal and external contradictions; they must not depend on the vantage point or status of the observer. This is a stringent condition for models to satisfy, and few do.

Theistic religions proclaim the existence of a personal, caring God. Given the supreme importance of dignity and human beings' spotty record when it comes to providing it to one

another, it's the rare person who, when worldly options are exhausted, has not imagined acceptance from a supra-human source. As the "dignifier of last resort," a supreme being, whose judgment trumps that of our community, can validate our strivings when our fellow humans reject us.

If and when we discover life elsewhere in the universe, the question of monotheism will arise again: if extra-terrestrials worship a god, is their god our God, or are we back to polytheism?

The same laws of nature that obtain on Earth hold as far as we can peer into the Universe. If there is a Creator, it would appear that He doesn't reinvent the wheel. If the same physical laws hold throughout the universe, then it's plausible that aliens will covet dignity as we do. This will be a good thing for us, if, as is statistically likely, we are not the most advanced life-forms in the Cosmos, because then more advanced beings will watch over us, much as we protect endangered species.

4.2 *The Golden Rule*

Just as good parents do not play favorites among their children, so God, conceived of as a single idealized father figure, would presumably accord equal dignity to *all* his "children". The Golden Rule is a symmetry condition—equal dignity for all, regardless of rank or role—that, with slight variations, is found in virtually every religion or ethical code.*

Do not do to others what would cause pain if done to you.

– Hinduism

Treat not others in ways that you yourself would find hurtful.

– Buddhism

What you do not want done to yourself, do not do to others.

– Confucianism

What is hateful to you, do not do to your neighbor.

– Judaism

Do unto others as you would have them do unto you.

– Christianity

Not one of you truly believes until you wish for others what you wish for yourself.

– Islam

We should behave to our friends, as we would wish our friends to behave to us.

– Aristotle

Act only on that maxim through which you can at the same time will that it should become a universal law.

– Immanuel Kant's Categorical Imperative

*Neminem laedere*⁸

– Legal codification of the Golden Rule, which translates as "general rule of care," or "hurt no one".

* See <http://www.loyno.edu/twomey/blueprint/GoldenRule.jpg> and <http://religioustolerance.org/reciproc.htm>

Contrariwise, a deviation from equal dignity is a broken symmetry and, as in physics, a deviation from symmetry signals the existence of a force that breaks it. Among humans, asymmetries take the form of inequitable or preferential treatment of persons or groups and, as in the physical world, these deviations from the symmetry implicit in the Golden Rule reveal the existence of coercion. For example, slavery requires force or the threat of force.

4.3 *Hammurabi's Legal Code (18th century BCE)*⁹

I had an ah-ha experience as a boy when I heard about King Hammurabi's practice of posting not only a list of crimes, but right alongside them, the specific punishments that would be meted out for committing them. By having the code carved in stone, the Babylonian ruler was signaling that the laws were immutable, universal, and not even subject to the whim of the king himself. Hammurabi's Code is one of the first to establish the presumption of innocence until proven guilty. I urged my parents to emulate Hammurabi.

4.4 *The Ten Commandments of Moses (15th-13th century B.C.E.)*^{*,10}

The notion of a commandment raises the question of the authority of the command-giver. Although most of the Ten Commandments sounded reasonable in Sunday School, I wondered about their origin. How could anyone be sure they came from God? Moreover, not everyone believed in the existence of God. I thought it would be important to non-believers to demonstrate that these rules could be justified in terms of their contribution to social wellbeing. And, if they could not be so justified, to drop them. Among other things, the Commandments give expression to the idea of monotheism and its corollary of a single Fatherhood within which we are all brothers and sisters deserving of equal dignity.

4.5 *Confucius (551 B.C.E.– 479 B.C.E.)*¹¹

Confucius emphasized personal and governmental morality and justice. Like the biblical prophets and their Kingdom of Heaven, Confucius imagined a Mandate of Heaven in which rulers chosen on the basis of merit, not birth, would bring peace and prosperity to the people through the power of exemplary moral behavior. Again, the idea is that the governing class is not above the law but rather is honor bound to serve others, not self.

4.6 *Mo Tzu's Family of Man and Doctrine of Universal Love (5th century B.C.E.)*^{12, 13}

Mo Tzu is less well known in the West than other Eastern prophets, but no less visionary. He may have been first to see the world as a village of kinsfolk, and from this insight he deduced that aggressive war is never justified. His doctrine of universal love and his argument that it is "supremely practical" were prescient and original. Mo Tzu's place in the Dignitarian Hall of Fame is unassailable, despite his diatribes against music and dance. Even in antiquity, futurists had their foibles.

4.7 *Jesus (6 B.C.E. – 30 C.E.)*

An advocate of universal love and teacher of dignitarian values, Jesus instructed: "You all love your neighbor as yourself."[†] This goes beyond assurances of equal dignity, but a world in which no one fears for his or her dignity will likely be one in which brotherly love will feel much nearer at hand than it does to most today. Absent threats to dignity, love might just possibly "bust out all over".

* See Exodus 19:23 and Deuteronomy 5:2

† Matthew 22:39

4.8 *Magna Carta (England, 1215)*¹⁴

When King John yielded to the demands of the barons at Runnymede—that he spell out his powers and guarantee their privileges—he was starting down a road that would lead to constitutional democracy. The “Great Charter” he was forced to sign famously includes the writ of habeas corpus, enshrining the right to appeal against unlawful imprisonment. I suspect there were voices at Runnymede who resisted taking those first baby steps towards democracy on the grounds that many animals didn’t do so and therefore it was contrary to nature to devolve power. That kind of thinking, still heard today, fails to appreciate the extent to which human intelligence and communication skills make possible complex organizations that, by tapping the power of numbers, can trump brute force. Contemporary manifestations of this dynamic are the uprisings in North Africa and the Middle East known collectively as the Arab Spring of 2011.

4.9 *Martin Luther and the Protestant Reformation (Germany, 1517)*¹⁵

The Protestant Reformation began as a protest against systemic corruption within the church hierarchy, extending even to the Pope. In his magisterial account of political revolutions, Eugen Rosenstock-Heussy argues that states that are relatively free of corruption owe this happy circumstance to the Protestant Revolution.¹⁶

4.10 *Oliver Cromwell, Charles I, and the “Divine Right of Kings” (Britain, 1649)*

Putting the king on trial and chopping off his head unambiguously made a point (reiterated by the execution of France’s King Louis XVI) that indeed there was no *right* to rule, divine or otherwise. Once the Divine Right of Kings had been nullified, people were free to ask, “Who *does* have the right to rule?” and to imagine that governing is no right at all; that our governors should serve us, not vice versa. The shift from monarchy to democracy prefigures the shift from faith-based to evidence-based truth: trust your own eyes over authority.

4.11 *The Glorious Revolution (Britain, 1688–89)*¹⁷

The Glorious Revolution marked the end of absolute monarchical power in Britain and the beginning of modern parliamentary democracy there. The monarch could no longer suspend laws, levy taxes, make royal appointments, or maintain a standing army during peacetime without Parliament’s permission, a first step towards civilian control of the military. The Bill of Rights it produced is a major milestone in the history of liberty, justice, and human dignity.

4.12 *Frederick the Great (King of Prussia, 1744–97)*¹⁸

Unlike many of his contemporaries, Frederick did not believe in the Divine Right of Kings. He saw himself as the “first servant of the state” and joked that the crown was “a hat that let the rain in.” To attract a more skilled citizenry, he generally supported religious tolerance, proclaiming, “All religions are equal and good and as long as those practicing are an honest people and wish to populate our land...we will build them mosques and churches.” Yes, mosques.

4.13 *American Independence and the U.S. Constitution (1776–1787)*

The American Revolution can be seen as the beginning of the end of Imperialism—a liberation from colonial rule that would spread worldwide over the next two centuries. Having rid themselves of foreign rule, the genius of the Founding Fathers was to assume the worst of

their own governors and design a constitutional system of checks and balances to minimize corruption and maximize the accountability of office holders.

The Constitution's most egregious moral flaw was the creation of two kinds of exclusions: women and people of color were held in abusive, exploitative second-class citizenships.^{19,20,21,22,23} It took the Suffragette movement of the nineteenth century to win women the vote and the Civil War and the Civil Rights Movement to establish the principle of equal rights for racial minorities. Despite its shortcomings, the amended U.S. Constitution is a milestone in imposing constraints on the power of government and establishing what Abraham Lincoln described as "government of the people, by the people, for the people."²⁴

4.14 "*Liberté, Égalité, Fraternité*" (France, 1789)

France's tri-partite revolutionary slogan has inspired reformers for two centuries. Omitted is **Dignité**, which requires generous measures of both Liberty and Equality. That is, no society qualifies as dignitarian that does not also offer constitutional protections of liberty and place limits on economic inequality so as to ensure equal opportunity. The overlap and interdependence of these four cardinal values is a subject warranting separate treatment.*

4.15 *Latin American Independence (Latin America, 19th century)*

The second European colony to expel its imperial rulers was Haiti, born in the Slave Revolt of 1791 and achieving permanent independence from France as a new nation in 1804. The Haitian Revolution is a milestone in the history of Africans in the New World. Other blows against (Spanish) colonialism are personified by Simon Bolivar in Venezuela; José de San Martín in Argentina; and José Martí in Cuba. The decolonization of the Western Hemisphere prefigures the worldwide spread of anti-colonialism in the twentieth century.

4.16 *The Abolition of Slavery (Britain, 1833; Russia, 1861; and the United States, 1863)*

Slavery was regarded as business as usual until the eighteenth century when Enlightenment thinkers criticized it for violating the Rights of Man and Quakers condemned it as a violation of Christian ethics.²⁵ Czar Alexander II freed the serfs in Russia in 1861 and Lincoln issued the Emancipation Proclamation freeing the slaves held in the Confederate States in 1863. Two years later, the 13th Amendment to the Constitution prohibited slavery throughout the United States.

4.17 *Labor Unionization (19th – 20th century)*

A landmark in the struggle between Nobodies and Somebodies (in the respective roles of Labor and Management) was the adoption of legislation guaranteeing the right of employees to unionize and bargain collectively.

4.18 *Defeat of Nazism and Fascism, Death Knell for Imperialism (20th century)*

Attempts by Germany, Italy, and Japan to establish empires of their own met with catastrophic defeat. In the half-century following World War II, national liberation movements spread across Asia and Africa, and, by the end of the twentieth century, colonialism was widely condemned like slavery with a paternalistic face.† Colonialism went from a proud and

* See, for example, the work of Jeremy Waldron who spoke on "Dignity and Rights" in The Tanner Lectures on Human Values at the University of California at Berkeley in 2009: <http://grad.berkeley.edu/tanner/0809.shtml>

† For purposes of illustration, a list of states and national independence leaders, would include, India (Gandhi, Nehru), Africa (Nkrumah, Kenyatta, Senghor, Nyerere, Mondlane, Mandela, et al), South East Asia (Ho Chi Minh), the Soviet Union (Gorbachev, Yeltsin) and its East European Satellites (Walesa, Havel).

profitable enterprise to shameful and indefensible exploitation in about two centuries, a mere six to eight generations.

4.19 *Universal Declaration of Human Rights of the United Nations (1948) and International Courts and Tribunals in The Hague (1945, 1993, 2002)* ^{26,27,28,29}

The United Nations Charter elevates dignity to the status of a human right and charges governments with protecting it. The Declaration set in motion a gradual acceptance (in law, if not always in practice) of many post-World War II conventions on human rights, and has led to a view of the person, not merely the citizen, as the carrier of human rights. Some have heralded this trend as the emergence of “global law” as distinct from “international law”.

The International Court of Justice, the International Criminal Tribunal for former Yugoslavia, and the International Criminal Court—which all have a historical antecedent in the International Military Tribunal at Nuremberg—have a variety of jurisdictions and purposes, but among them are the prosecution of individuals for genocide, crimes against humanity, war crimes, and the crime of aggression.

4.20 *The Civil Rights, Women’s, and Other Identity Movements (late 20th c.)*

Exploited subgroups have learned how to organize so as to resist predation by fellow citizens. Much as slavery lost its sanction in the nineteenth century, the residue of slavery—segregation and racism—lost legitimacy in the twentieth. Other ignoble “isms” (anti-Semitism, sexism, ageism, ableism, homophobia) have joined racism in disrepute.

But identity politics can take us only so far because it’s predicated on an “us” versus “them” distinction. In contrast, dignitarian politics is all-inclusive. Most of us are both victims and perpetrators of *rankism*.³⁰

rankism (RANK-iz-m) noun

1. *abuse, discrimination, or exploitation based on the power signified by social or organizational rank*

2. *degrading assertions of rank*

In every struggle to overcome an ism there are some non-victims who nevertheless ally themselves with the ism’s principal targets and attempt to overturn the prevailing consensus. For such liberal forerunners, there’s an element of altruism at work. Empathy blurs the line between altruism and self-interest.

With the realization that one’s dignity is only as secure as the next person’s, one may support the dignity movement against rankism in order to secure one’s *own* dignity.³¹ As self-interest and altruism align, the Golden Rule becomes self-enforcing and the transition from a predatory to a dignitarian world gains momentum.

4.21 *The Human Potential Movement (1960–present).*

Man is a creature who makes pictures of himself and then comes to resemble the picture.

– Iris Murdoch

In its insistence that *everyone* has untapped mental, physical, and spiritual faculties, the Human Potential Movement goes beyond identity politics. Heralds of the universality of unrealized abilities include William James, John Dewey, A.S. Neill, Carl Rogers, Abraham Maslow, Michael Murphy, et al. The Human Potential Movement presents us with a new picture of ourselves—“We are as gods and might as well get good at it”—and we are gradually coming to resemble the picture.³²

4.22 *The Arab Spring (2011)*

After decades of suffering authoritarian rule, mass protests spread across North Africa to the Middle East demanding an end to paternalism and autocracy. Beginning in Tunisia with the so-called “Jasmine Revolution,” the common goal of these non-violent uprisings is not so much freedom or bread, but elemental human dignity.

Each of the milestones mentioned above marks a curtailment of the potential for rank-based abuse, and so a strengthening of individual human rights. Establishing a human right doesn’t guarantee it, but it does shift the burden of proof from victim to perpetrator, and that makes officialdom more accountable and therefore less likely to engage in rankism.*

These milestones provide *empirical* evidence for Martin Luther King, Jr.’s claim that the arc of the moral universe bends toward justice. The arc’s curvature, however, is still indecipherable to many. Indeed, no one who witnessed the horrors of the twentieth century can be faulted for thinking that the moral arc is bending *away* from justice.

To make out the curvature in spite of the ambiguous and arguable historical record, we need a theory.

5. From Predation to Dignity: The Paradox of Force

Without a theory the facts are silent.

– Friedrich Hayek

Since World War II there have been scores of wars, millions of casualties, tens of millions of refugees; fighting continues today in many parts of the world.

Since the Holocaust, and despite the world’s determination that it not happen again, genocides have occurred in Cambodia, Rwanda, Bosnia, Darfur, and elsewhere. Persistent poverty enshrouds one-third of the world’s seven billion people and many warn that population pressure and/or climate change will pit us against each other in a struggle for scarce resources.

In this light, it’s not unreasonable to argue that man’s predatory practices continue unabated, and many so insist. But, an analysis of the social dynamics of power provides grounds

*As defined in the text, rankism is not the mere use of rank, but rather abuse of the power attached to rank. I use “abuse” to signify the persistent misuse of power, that is, its continued use not to serve the group but to advance the personal interests of its high-ranking members. Dictators and monopolists go to great lengths to avoid competition because they sense their own vulnerability to it. By the time rivals win a chance to challenge their monopoly, the institutions presided over by dictatorial rulers are usually far weaker than the alternatives they’ve been suppressing. Transitions to more dignitarian governance, once they begin, often occur almost overnight, as in Romania, the Soviet Union, Indonesia, and Serbia.

for hope. Martin Luther King, Jr. did not prophesy quick or easy passage to justice, only that over the long haul the moral arc was bending *toward* justice.

Successful predation depends on a power advantage. Humans have an edge over the other animals and, from time to time, often as a result of a technical or organizational breakthrough, they may gain an edge over other humans as well. To the extent that we can put people down and keep them there, we can take what's theirs and force them to do our bidding. To the extent that we can't credibly do so, we become vulnerable to *their* predations.

One reading of the human story emphasizes war, domination, rapine, pillage, slavery, colonization, and exploitation. Wealth and leisure for the few and a subsistence living for the many.

Another telling of history, as suggested by the milestones cited above, highlights overthrowing tyrants, expelling colonizers, and, by marshaling the strength of numbers, progressively emancipating ourselves from domination, slavery, and exploitation.

A “paradox of force” lies in the fact that a group’s competitive success vis à vis other groups depends on limiting the use of coercive force *within* the group. Why?

If a ruler is regarded as unjust or self-aggrandizing by his subjects, morale will deteriorate to the point that group solidarity is weakened and the will to fight impaired. Unjust leaders neither deserve nor elicit loyalty and, when push comes to shove, their people may turn on them.

This means that governance that promotes loyalty and solidarity has survival value. Even societies that adopt a *predatory* stance looking outwards, are unwise to disregard *dignitarian* values looking inwards. Over the course of history, not to complement outward-directed predatory capability with a modicum of dignity for those within the group has been to lose out to groups whose stronger social bond enabled them to marshal and project superior force.

For this reason, the principle of equal dignity is more than an admonition to be “nice.” A policy of relatively equal dignity enhances the strength of groups that practice it. None do so consistently, of course, but some do so more than others and this gives them a competitive advantage stemming from group cohesiveness. This suggests that, on a millennial time scale, the Golden Rule is self-enforcing. We were too quick to judge it toothless. Rather, it simply took a few thousand years to grow teeth.

As we realize that dignitarian societies have, over the long haul, a competitive advantage, and as less dignitarian groups are absorbed by more dignitarian ones, we operationalize the Golden Rule and extend its purview.

Within a group, it's not just “top dogs” who abuse power. Power abuse is a tempting strategy at any rank because everybody is a somebody to someone and a nobody to someone else. Accordingly, a predatory posture can be assumed towards underlings no matter where one stands in the hierarchy.*

Because societies predicated on equal dignity are generally more productive and creative, and are more strongly committed to their common cause—be it aggressive or defensive—

* Unless, of course, you are at the very bottom. But even then, you can resort to kicking the dog. Much cruelty to animals is a result of indignation that humans feel towards other humans who have humiliated them, but whom they dare not confront because the abusers are shielded by rank.

they are, on average, fitter. This does not mean that dignitarian groups win every contest with more predatory groups. Factors other than social cohesion also figure in the outcome. But it does mean that, with starts and fits, organizations that tolerate power abuses effectively de-select themselves.* Over a long enough time period, the circle of dignity expands.

The paradox of force is that, statistically, dignitarian societies gradually absorb more predacious ones until finally there is no longer a significant likelihood of inter-group predation. Indignant, disgruntled outliers may resort to terrorism, but they will not be viable unless they are serving as proxies for a group large enough to harbor and support them.

A selection process governed by the same dynamic unfolds among organizations. For example, more dignitarian companies will, on average, serve their customers and employees better, and will outperform less dignitarian ones. Over the long haul, equal dignity slowly gains ground.

While such an evolutionary trend may sound Pollyannaish, it is revealed as a logical consequence of the free play of power within and between competing groups. The paradox of force—that in the long run, right makes might, not vice versa—provides causal underpinning for Martin Luther King, Jr.’s observation regarding the curvature of the moral universe. Despite the relentless drumbeat of bad news, and barring a major catastrophe (such as one resulting from nuclear or cyber war, pandemic, famine, climate change, or a colliding asteroid) denizens of the twenty-first century could find themselves witnessing a phasing out of our age-old predatory strategy and its replacement by a dignitarian one. Even if there are major setbacks—and we must expect at least a few—universal dignity seems to be the state of social equilibrium toward which we are tending.

6. Predation, No; Competition, Yes

The majority of our human ancestors have suffered lives that, as seventeenth-century English philosopher Thomas Hobbes famously put it, were “nasty, brutish, and short.” A great many still do. But we’re at a critical juncture beyond which lies the possibility of an epochal shift to a post-predatory era. Predation has taken us this far, and for that we must give it its due. But as a survival strategy it can take us no further without undermining what any strategy is meant to do—ensure our survival. We can take heart from the fact that we’ve already disallowed several broad categories of predatory behavior (e.g., those referenced in “Milestones”), and go on from there to *disallow predation itself*.

First, however, there’s one more make-or-break issue that must be addressed. Removing the traces of predation from our treatment of others is analogous to that of changing attitudes about race, gender, sexual orientation, and disability. It’s not a quick or easy process, but a start has been made and there’s no going back. For those of us who grew up within a social consensus that condoned the familiar “isms,” we can change our overt behaviors, but not

* Whenever a “survival of the fittest” argument is invoked, a question of circularity arises: Can “fittest” be defined independently of “what survives”? In this case, the question takes the form: Can “dignitarian” be defined independently of “what prevails”? If not, the argument is circular, a mere tautology and it can tell us nothing about the curvature of the moral universe.

Indeed, Darwin’s theory was initially attacked as circular. Critics maintained that the only way we could gauge fitness was to look and see what survived. Fortunately for the theory of natural selection, it is possible to state independent conditions that give organisms an advantage, or handicap them, in the struggle to survive and reproduce. Similarly, there is by now a long list of practices that are known to undermine dignity. The de-selection of rankist organizations that tolerate rankism is analogous to the de-selection of relatively unfit organisms in the struggle for reproductive survival. Darwin’s principle is not circular (fitness criteria *can* be delineated independently of survivability), and since it can be foreseen that the inefficiencies attendant to rankism handicap organizations burdened by them, the notion that rankist values are recessive—and dignitarian values dominant—is not circular either.

entirely eradicate attitudes to which we were exposed as children. What can change, what in fact does change, are the attitudes that one generation models for the next. For the most part, baby boomers did not pass the prejudices of their parents on to their own children. With each successive generation, bigotry attenuates. Over the course of several generations, prejudice and discrimination may diminish to the point where the young wonder what all the fuss was about.

But, in addition to overcoming temptations to put others down and advantage ourselves at their expense, there's a conceptual barrier to putting our predatory past behind us. Disallowing predation sounds impossible because we haven't figured out how to forego it without inhibiting competition. Although it's natural to see competition as the culprit (because it is so very often unfair, and because many competitors interpret winning a particular competition as an excuse for demeaning and exploiting those who lost), no society that has curtailed competition has long endured. As libertarian ideology confuses predation with competition and may find itself an apologist for the former, so egalitarian ideology confuses competition with predation and may advocate killing the goose—competition—that lays the golden egg. To this dilemma—how to allow competition and disallow predation—dignitarian governance provides a possible solution.

Competition is an integral part of our past and fair competition is indispensable to a robust future. To delegitimize gradations of power is not only impossible, it's a recipe for dysfunction and anarchy.

From the natural selection that drives the differentiation of species to the marketplace that refines products and ideas, competition determines fitness and protects us from abuses of power by economic and political monopolies. To abolish competition is to invite economic and political stagnation, and eventually to fall behind societies that hone their competitive edge.

The difference between predation and competition is that predation knows no rules. In contrast, competition can be made fair. Making sure that it is—by disallowing rankism in all its guises — a proper function of government.

At every point in our social evolution, power rules. Power is neither good nor bad, it just is, and objecting to the existence of power differences is like complaining that the sun is brighter than the moon. Abuses of power persist until the individuals or institutions perpetrating them find themselves confronted with greater power. This would be grounds for cynicism were it not that when power is abused there eventually surfaces a less abusive and therefore still more powerful alternative. Groups that harbor indignity, burden themselves with the corrosive effects of suppressed indignation. The long-term trend of this evolutionary process is the discovery of ever more effective forms of cooperation, successively out-producing, out-performing, and finally replacing more rankist organizations, institutions, societies, and states.

7. The Dawning of a Dignitarian Era

As Mo Tzu tried to tell us, we are one big extended family. The simultaneous advent of globalization and dignitarian values is no coincidence. Predation isn't working as well as it used to. In addition to the reasons given above, greater exposure to "foreigners" is making their demonization untenable.

Another factor in the demise of the predatory strategy is that victims of rankism have gained access to powerful modern weapons and can exact a high price for humiliations inflicted on them. Thus, the victims themselves are increasingly in a position to make the cost of predation exceed the value of the spoils. Weapons of mass destruction seize the imagination, but even if we do manage to keep them out of the hands of terrorists, non-violent “weapons” of mass *disruption*, employed by aggrieved groups, can bring modern, highly interdependent societies to a standstill. This represents a fundamental shift in the balance of power in favor of the disregarded, disenfranchised, and dispossessed.

Given that predation has been a fixture throughout human history, it’s not surprising that when one form of predation ceased to work, we devised alternative, subtler forms to accomplish the same thing. Although slavery itself is no longer defended, poverty functions in much the same way—by institutionalizing the domination and exploitation of the poorer by the richer.

In the twenty-first century, the largest group of people that can still be taken advantage of is the poor. We should not be surprised if, using techniques of mass disruption (tactics of non-violent civil disobedience), they acquire the organizational skills to make their ongoing exploitation untenable.

Something new is afoot, and it marks a change fundamental enough to define an era. Opportunistic predation—the survival strategy that we’ve long taken for human nature—has reached its “sell-by” date. Even wars by superpowers against much weaker states are proving unwinnable. Military domination is no longer the profitable business it once was.

Rankism is the residue of predation. As predatory uses of power are revealed as counter-productive, we are leaving predation behind, like the toy soldiers of childhood, and creating a world in which the uses of power are limited to those that extend and enhance dignity.

Humanity’s next step is to build dignitarian societies in a post-predatory world. Knowing that the moral arc of history does indeed bend towards justice gives reason to hope that this may be possible.

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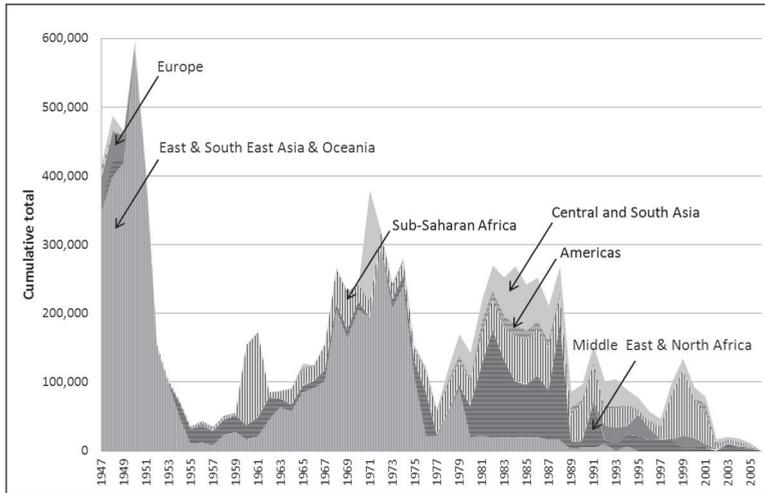
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Mediation of Conflicts by Civil Society

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The number and severity of conflicts (violent clashes where there are more than 1000 casualties) have declined markedly since the end of the Cold War. This is shown graphically below despite this being a time of high population growth:¹

Figure 1: Number of reported, codable deaths from state-based armed conflict, 1946-2005



Even including a rise in the number of terrorist incidents, these trends hold true.²

The Decline in the Level of Conflicts

The causes of this decline are threefold: Greater reliance on the United Nations; a far larger number of people who have stronger stakes in the stability of their societies; and far greater activity by civil society organizations mediating between potential and actual combatants. In addition, the normative landscape for conflict and intervention has changed considerably in the post-Cold War era. Norms about the appropriateness of using war and violence to resolve disputes have shifted, making it difficult for leaders to wage war with impunity. And Cold War era presumptions regarding the inviolability of national sovereignty have eased to allow for intervention under the mantle of the UN's "responsibility to protect."

Prior to the end of the Cold War, prolonged conflict often served the interests of the two major powers, the United States and the Soviet Union. One thinks of the Cold War battleground of Vietnam and the conflict in Angola that straddled the end of the Cold War. Where superpower standing was at stake, there was a common interest to prolong conflict, and to stoke the fires of local conflict in the name of Superpower rivalry. Hence there was often a shared policy of the West and East to by-pass the abilities of the UN to help reduce some of the main conflicts of the 1960s, 70s and 80s.

After the Cold War ended, it became the common policy of all the Permanent Members of the Security Council (the P-5) to turn to the UN to avoid conflict and to broker peace. There was a dramatic upgrading of UN Peacekeeping. From the end of the Cold War in 1989 to the present there has been a ten-fold increase in the number of peacekeepers, from 10,300 to the current level of 98,000 military plus 24,000 civilians. The number of peacekeeping missions increased from eight very modest missions to 16 more robust missions.³ Academic research bears out the overall effectiveness of peacekeeping operations in reducing conflict. The most recent *Human Security Report* summarizes recent findings, concluding that “an appropriately designed peace operation significantly improved the prospects for peace,” and that the risk of war recurring “was reduced by at least half compared to post-conflict countries where there was no peacekeeping operation.”⁴

Accompanying this was far more active use of UN Security Council sanctions against aggressors; some institutional reforms to make UN peacekeeping more effective; the creation of the UN Peacebuilding Commission to make smoother the transition from conflict to post-conflict normalization (by moving in a coordinated way from emergency humanitarian help, to reconstruction help, to normal development help); and the creation of international criminal law against aggressors; and the establishment of special tribunals and the International Criminal Court. All of this considerably expanded the array of UN hard powers to reduce conflicts and the affects of conflict. The work of Paul Collier at Oxford demonstrated that without long term development and security assistance, conflicts have a way of re-igniting, and when they do the whole neighborhood of surrounding countries usually suffers greatly as well.⁵ So it is in the interests of national and regional peace to bind up the wounds of conflicted societies and this takes many years of concerted efforts. An important case in point is Afghanistan where repeated early leave taking by the international community has left the country prone to new conflict. Arguably the UN and other important parts of the international community are getting better in learning how to help societies move out of conflict and into sustained development. Cases in point are Sierra Leone and Liberia.

Certainly there are critiques about the UN’s roles. Well researched proposals to improve the UN’s peacekeeping operations (e.g., the 2001 report of the Panel on United Nations Peace Operations, known as “The Brahimi Report”) have been neglected by the General Assembly due to almost trivial budget considerations. The process of creating ad hoc peacekeeping missions means throwing together all kinds of different military standards, procedures and linguistic groups and troops that have not trained together all under ad hoc command, rather than having a standing military (which the P-5 opposes). Alas, there has also been a number of well reported incidents of UN peacekeepers abusing civilians they are supposed to be protecting. But far better to have a variably functioning UN peacekeeping force than not to have one at all.

So today the UN has the second largest deployed military in the world, and is very often called upon to maintain peace.

The second main factor leading to a decline in conflicts has been the sharp rise of the middle class in countries that had been prone to conflict. Quantitative research has found “a very strong association between GDP per capita and the risk of war: high incomes are associated with low risks of war.”⁶

It used to be a cliché that no two countries ever got into conflict if they had McDonald’s restaurants. The conflict in the former Yugoslavia put an end to that cliché. But the principle remains that people with higher and more reliable income are more apt to opt for peaceful resolution of disputes. This principle is not a stand alone. But it does operate as an important and measurable ingredient for peace. The World Bank’s World Development Indicators data show that countries at peace have less poverty, better health, and higher growth than countries in and out of conflict.

The third factor is the least appreciated. It is the rise of civil society groups that help resolve conflicts. While UN peacebuilding, peacekeeping and mediation efforts have garnered wide attention in the media and academic writing, the proliferation of private conflict prevention and resolution efforts have remained far under the radar. In fact, there is a thriving ecology of groups working to prevent and resolve deadly violence at every point of the conflict spectrum, in every imaginable topography. These groups are local and international, and are found in all but a very few countries. The professionalism of these groups has been increasing markedly and their impact is profound. Why so? Why not leave peace to the diplomats? The answer is that diplomats certainly have useful roles, but they tend to deal with only a part of society (and they may be prevented by political considerations from actual discussion with potential or real combatants), and their key job is to keep relations with the party in power. Diplomats representing Great Powers usually are associated with the policies of the incumbents. In contrast, civil society groups can work as neutral entities with both or all sides in a potential or real conflict. They are not wed to a fixed national position. They are wed to finding what can work to allow peoples to live together in peace.

Civil society groups perform a number of useful functions, both in preventing and resolving conflict. While the groups we mention here are largely American and European, working with local partners, a huge variety of civil society organizations of all nationalities work in conflict zones around the world.*

- i) **Early Warning:** Civil society groups can voice an alarm when situations are deteriorating. The best known such service is CrisisGroup (formerly known as the International Crisis Group), which regularly reports on leading signs of the erosion of peace and cases of rising risks of conflict. A parallel service is Refugees International, which alerts the global humanitarian and political communities when there is a rise in refugees (often a sign of severe upcoming conflict). The ENOUGH Project and the Genocide Intervention Network serve as advocacy organizations, alerting US government officials about imminent genocide in Africa, and building political will for intervention.

* For a full listing of Alliance for Peacebuilding members, all of which work actively to prevent and resolve conflict worldwide, see www.alliancefor-peacebuilding.org.

- ii) **“Structural” conflict prevention:** An increasing number of groups work very far back in the conflict spectrum, striving to develop strong local institutions that can resolve conflict long before actual violence breaks out. Some of these groups might not even identify themselves as conducting “peacebuilding” *per se*, but nonetheless carry out activities that lead to stronger and more resilient societies that are less prone to violence. The development organization MercyCorps, for example, embeds conflict prevention into its development work, targeting groups like young men who might otherwise be drawn into violence, and providing jobs and education. Search for Common Ground develops media strategies for better relations between ethnic and political groups, including a long-running radio soap opera in Burundi. Partners for Democratic Change has offices around the world dedicated to strengthening communities’ ability to manage change, maximize the benefits of diversity, and prevent and resolve conflicts.
- iii) **Conflict Resolution:** A huge range of civil society groups work in societies either undergoing or immediately threatened by outbreaks of deadly violence. Some groups like Crisis Management Initiative and Humanitarian Dialogue offer mediation services at a “second track” level outside governmental channels, and have worked in areas as diverse as Aceh, Somalia and the Philippines. The Public International Law and Policy Group offers legal representation to parties in actual peace negotiations, and serves on the ground in conflict areas around the world to avert election violence (Kenya, Nepal) and promote rule of law (Tanzania, Somaliland). Other groups, like Conciliation Resources and the Institute for Multi-track Diplomacy, work with civil society organizations to develop strategies for influencing governmental behavior or changing conflict dynamics. 3P Human Security works in Afghanistan on civil-military dialogue, and prepares civil society groups to engage in discussions about long-term peace in Afghanistan. BEFORE works to avert election violence in Guinea and Guinea-Bissau.
- iv) **Post-Conflict Peacebuilding:** While it is not always easy to separate conflict prevention from post-conflict peacebuilding, an increasing sector of the field is working to re-build war-torn societies, and to prevent a descent into violence. The period after a peace agreement is signed is often the bloodiest time of a conflict, and these groups focus on easing this transition. The Project for Justice in Times of Transition assists leaders in divided societies struggling with conflict, reconciliation and societal change by facilitating direct contact with leaders who have successfully addressed similar challenges in other settings. The International Center for Transitional Justice provides technical assistance for countries establishing truth and reconciliation commissions, and other forms of post-conflict judicial processes.
- v) **Dissemination of theory into practice:** Peacebuilding is a field driven to an unusual degree by ideas, with robust interaction between academics and practitioners. Under the cover of academic research, many universities offer peacebuilding services, holding conferences and bringing warring groups together for reflection and the development of new ideas for resolving conflict. George Mason University’s School of Conflict Analysis and Resolution, Harvard’s Program on Negotiation, Syracuse University’s Program on the Advancement of Research on Conflict and Collaboration, American University’s International Peace and Conflict Resolution Program, and Brandeis University’s Co-Existence Program are but a few of the peace-oriented academic programs training the next generation of practitioners, and carrying on quiet but dynamic conflict intervention.

Future Trends in Peacebuilding

The active involvement of civil society in peacebuilding shows no signs of abating. In addition to areas of current interest, we predict three areas of increased growth for peacebuilding: a systems approach to peace; the more active engagement of women in peacebuilding; and a stronger focus on the links between climate change and conflict.

–A Systems Approach to Peace

A tremendous challenge for the peacebuilding community to date has been to realize the *collective* impact of groups intervening in the same conflict arena. Typically, diplomats do not communicate with military actors or civil society groups; civil society groups do not communicate with one another; and actors working in a range of substantive areas – from environmental security to public health to development – do not reach across disciplinary lines to analyze how they might cooperate more effectively for joint gain. One of the most exciting areas of change in the conflict resolution field is the development of a “whole of community,” or “systems” approach to peace. In a whole of community approach to peace, each level of peacebuilding practice interacts consciously with every other, sharing information and dividing labor to form a more efficient overall strategy. Operating at a systems level allows policy makers and practitioners to more fully understand complex conflict environments, find the linkages that should be made between programs, identify leverage points where impact can be amplified, and set the most compelling priorities for action.

–Women’s Participation in Peacebuilding

A second area of growth in the field is the burgeoning role of women in fostering peace. While women often form the backbone of civil society organizations working toward peace, they are vastly underrepresented as mediators, and as governmental parties signing peace agreements. A typical experience for countries in conflict is for women leaders to work for peace, sometimes decisively and very often with high risk and amazing dedication, only to be quickly subordinated by men at the bargaining table, and in post-war reconstruction efforts like demobilization, disarmament and re-integration programs. This was the common situation in the struggles for renewed national life in Eastern Europe when the Soviet empire was dissolving, and has been found through the range of African conflicts, an exception being Liberia where women were decisive in forcing a peace agreement and then instrumental in obtaining political power.

United Nations Security Council Resolution 1325 of October 31, 2000 called upon all nations to increase representation of women in all decision making levels (national, regional, international) to prevent, manage and resolve conflict; and called upon the UN to involve women at all levels in these processes and in peacekeeping operations. The rather remarkable creation of UN Women, a major organizational reform of the UN approved last year, has reinvigorated interest in and action on 1325. Far more attention is also being given to making sure women are represented at the peace table, as parties and mediators, building on a very weak base of seven percent representation. And sexual violence is finally being recognized as a war crime and treated accordingly by peacekeepers, military actors, and tribunals. In short, the motto of a major new USAID program on women in peacebuilding is apt: “Noth-

ing about them without them.” The Nobel Peace Prize Committee apparently agrees given their 2011 awards.

–Peace and Climate Change

The peacebuilding community – at the governmental level and the civil society level – is increasingly recognizing the links between climate change and conflict. The Darfur conflict, for example, was properly treated not only as a crisis of governance and violence, but also as an ecological disaster – increasing desertification caused by global warming led to clashes between nomadic and pastoral tribes, who now needed to compete over decreasing amounts of arable land. Many organizations are already helping parties mediate over scarce water supplies, devising creative solutions to scarcity in watersheds ranging from the Middle East to the Himalayas. Negotiating over water has even been called “The Blue Peace,” with the idea that countries that cooperate over water resources will be less likely to fight over other issues. Conflict prevention operating at the margins of ecological change will only increase in the coming decades, bringing a range of scientific expertise, novel conflict resolution techniques, and new forms of cooperation.

Interest of the World Academy of Art and Science in Peace

Working for peace is part of the heritage WAAS fellows have been given by Academy founders who, after helping develop the theories and technology for nuclear weapons, were amongst the first to recognize that they should be banned. Two of the seven founders of WAAS (Robert Oppenheimer and Bertrand Russell) became global figures in proposing nuclear disarmament. A charter member of the Academy was Joseph Rotblat, founder of the Pugwash Conferences on Science and World Affairs, a group very active since its creation on nuclear disarmament. Rotblat was the official liaison between Pugwash and WAAS.

In the Academy’s first substantive endeavor, *Science and the Future of Humanity*, Oppenheimer spoke with regret about the development of the bomb and said that only by discovering our common humanity and by making education available to all can we become a world with a positive future. He sketched out why one needs science and the arts together. He said “For the artist and the scientist there is a special problem and a special hope, for in their extraordinarily different ways, in their lives that have increasingly divergent character, there is still a sensed bond, a sense of analogy. Both those of science and of art live always at the edge of mystery, surrounded by it, both always, as the measure of their creation, have to do with harmonization of what is new with what is familiar, with the balance between novelty and synthesis, with the struggle to make partial order in total chaos. They can, in their work and in their lives, help themselves and one another, and help all humanity. They can make the paths that connect the villages of arts and sciences with each other and with the world at large the multiple, varied, precious bonds of a true world-wide community.”

A number of notable Academy figures continued work on nuclear disarmament and peace. In 1964 the Academy focused on Conflict Resolution and World Education. The theme was that a culture of peace had to be a major global effort. Similar activities took place in the following two decades.

✦ In 1989 the International Commission on Peace and Food was constituted by Fellow

Garry Jacobs and for eight years the Center it established was chaired by former Academy President Harlan Cleveland.

- ✦ Its work influenced thinking in the Academy on these issues. In the mid-1990s there was an effort aimed at the Balkans on Tolerance, Science and the Modern World.
- ✦ An international symposium on peace and development was held under Academy auspices in New Delhi in 2004. A series of roundtables began in 2005 involving Harlan Cleveland, Robert McNamara, Air Commodore Jasjit Singh, and a half dozen other Fellows, focusing on the safety risks of nuclear weapons. Late in 2005 the Academy held a NATO-sponsored workshop on nuclear safety and disarmament issues in conjunction with its 2005 General Assembly in Zagreb. As an immediate follow up, the Board created a Standing Committee on Peace and Development Studies with Garry Jacobs as Chair.
- ✦ In 2006 the Academy mobilized very significant financial support that enabled the Global Security Institute to gather a large number of top representatives of Middle Powers which urged the nations holding nuclear weapons to disarm. They called nuclear weapons a threat to their own nations, thus widening the rationale for disarmament.
- ✦ In 2007 the Academy published through the World Futures Society a detailed guide on security and nuclear disarmament.
- ✦ In 2008 the Academy helped sponsor a global contest among youth and a conference of the winners of “Students for a Nuclear Weapons Free World,” organized by the World Federation of United Nations Associations.
- ✦ Also in 2008 WAAS Fellow Jasjit Singh organized with India’s Ministry of External Affairs an important conference of Indian leaders and other Academy Fellows marking the 20th anniversary of Prime Minister Rajiv Gandhi’s historic speech at the United Nations calling for complete nuclear disarmament. Prime Minister Manmohan Singh keynoted the conference. The conference proposed a comprehensive concept of cooperative human security encompassing military, political, environmental, food, energy, employment and financial issues. This was followed up later in the year at the 2008 Hyderabad General Assembly with panels. Subsequently, Prime Minister Singh formally took up Rajiv Gandhi’s proposals as a key part of his Government’s foreign policy.
- ✦ In February 2011, the Academy met with Indian security officials and academic experts on nuclear disarmament issues. At the conclusion of the meetings the members of the Academy’s Standing Committee on Peace and Development wrote on their behalf to India’s top political leaders about the important safety issues in nuclear weaponry and the need for negotiated safeguards.

Implications for the Future Work of the Academy

Particularly in the 2008 Conference in India involving top governmental leaders and in the linkage within the Academy of Peace and Development, there is clear understanding of the complexity of finding and holding peace in areas of conflict. New learning from civil society on ‘Whole of Community’ approaches to building towards peace has not yet been formally applied to help establish the pre-conditions for successful nuclear disarmament between states. There are other implications for the Academy by these developments:

- (1) We should take advantage of this new learning to think through our own strategy to foster nuclear disarmament and to then articulate an updated strategy. This new learning calls for more complex and longer term strategies.
- (2) We could usefully partner with talented civil society organizations expert in peacebuilding or networks of such organizations.
- (3) Women need to be integrally involved in both the strategy and in the participation of Academy programs working for peace.
- (4) Our strategies should aim to involve parties on both sides of disputes to help think through and act on whole of community strategies.
- (5) The Fellowship of the Academy should be bolstered by experts (of both genders) from the peacebuilding community.
- (6) Missing from both the peacebuilding and the nuclear disarmament strategies is focused use of electronic communications and media. More modern means of meeting and linking need to be explored in our strategies.
- (7) Further down the line, the Academy might well be a neutral ground to bring together the peacebuilding and nuclear disarmament communities to explore how the learnings from both groups could enrich the other, and to promote collaborative initiatives involving both groups.

It has been over fifty years since the founders of the World Academy urged work on nuclear disarmament. There has been progress, particularly between the US and Russia, but it has been slow in coming. Rather than reducing, we have seen an increase in the number of nuclear powers, a setback for the Non-Proliferation Treaty. The Fund for Peace's Failed State Index indicates that the potential for war and massive loss of life threatens a number of important states, including a nuclear power. All this should add urgency to our work. Fortunately, new learning creates new opportunities to further the Academy's long term interests in fostering peace and development.

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Rising Expectations, Social Unrest & Development*

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Abstract:

The relationship between peace and development holds the key to effective strategies for addressing the roots of social unrest. Rising expectations are the principal driving force for social development. However, the faster and higher aspirations rise, the greater the gap between expectations and reality. That gap promotes a sense of frustration, deprivation and aggression leading to social unrest and violence. The opposite is also true: rising economic opportunity can mitigate or eliminate social unrest. The remarkable renunciation of armed struggle by the IRA in North Ireland in mid - 2005 appears inexplicable until the impact of rising incomes and expanding employment opportunities in the Republic of Ireland is also taken into account. A similar approach can be applied to address the problems of violence and social unrest in Kashmir and Palestine. Here too apparently intractable conflicts will lend themselves to be addressed economically. India's recent efforts to provide guaranteed employment to its rural poor are part of a strategy to stem the rising tide of social unrest in impoverished areas resulting from rising expectations among the poor.

1. Introduction

During the early 50s an American aid official working in Taiwan noted a marked change in the attitudes of the local population which was having a profound impact on the pace of social development in the Far East. Harlan Cleveland, who became Assistant Secretary of State under Kennedy, US Ambassador to NATO under Johnson and later President of WAAS coined the phrase "Revolution of Rising Expectations" to describe what he observed. He perceived that the real driving force for development in the region was social and psychological rather than financial. In the early 1970s The Mother's Service Society (MSS), a social science research institute based in South India, observed the same phenomenon of rising aspirations beginning to emerge in the first generation of young Indians born after Independence releasing fresh energies for national development. The Society formulated a comprehensive theory of social development explaining the role of this phenomenon in the development process. In the early 1990s the International Commission on Peace & Food (ICPF) observed a similar change in attitudes sweeping across Eastern Europe following the fall of the Berlin Wall. All three concluded that attitudinal change in the form of rising aspirations is the central motive force for social development.

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In its report to the UN, the Commission observed that the phenomenon of rising aspirations has positive as well as negative dimensions, both of which impact on global peace and security. Rising aspirations release social energy and dynamism for new initiatives and more rapid progress. At the same time, if the rising aspirations and actual results do not match and the gap between expectations and reality becomes too wide, expectation turns into disappointment, discontent and in some cases violence. More than absolute poverty, what breeds violence is the perception that others are developing faster and farther in relative terms. This explains why at a time of rising prosperity following the end of the Cold War, social unrest and violence have also increased, and the number of regional and local conflicts has risen sharply.¹

In the course of human evolution from mere physical survival to mental awakening, the social unrest generated by rising expectations is an inevitable and necessary stage. Discontent is an indication that people are no longer resigned or satisfied with mere survival. It replaces a feeling of resignation with an active aspiration for more. Rising aspiration for more has accelerated progress around the world, while at the same time spreading discontent across the globe. Peace and development are two aspects of a single social condition. When the nature of their relationship is fully appreciated, it offers a powerful means for resolving conflicts.

2. An Irish Lesson

The truth of this linkage has been dramatically demonstrated by the cessation of terrorist violence in Ireland in July 2005. The origin of the Irish problem can be traced back nine centuries to the time when English kings colonized a small area around Dublin. In the 16th century, Edward VIII proclaimed himself King of Ireland. When he broke with Rome and formed the national Church of England, he failed to win over the Irish Catholics to Protestantism. A century later, Cromwell landed in Ireland and dealt a crushing blow to the Catholics, seizing their lands, massacring many and deporting many others. By 1703 Protestants owned nearly all the land and the majority of Catholics were reduced to being impoverished tenant farmers. Highly discriminatory laws were passed against the Catholics preventing their access to education, public office and parliament, etc. The English came to look down on the Irish as an inferior race, generating a sense of humiliation and resentment that seeped into the very blood of the Irish and festered for centuries. The potato famine of 1845-48 effectively depopulated the country, causing a million deaths due to starvation and disease and resulting in large-scale emigration to the United States. As a result, there are currently eight times more Irish living abroad than in Ireland.

The country was partitioned in 1920 into a northern and southern part and in two years the mainly Catholic South became a dominion within the British Commonwealth as the Irish Free State. In 1938, Ireland declared itself to be a republic and pulled out of the Commonwealth which prompted England to incorporate the six northern districts containing equal numbers of Catholics and Protestants into the U.K as Northern Ireland. This division of the country into two parts evoked protests from the Irish Republic but it did not spark serious violence until a Catholic procession was attacked by Protestants in 1968. This attack triggered a spiral of violence lasting for three decades and resulting in the loss of more than 3500 lives.

Over the past thirty years many attempts have been made to bring peace to the trou-

bled region, but no solution was ever found to the intractable political and religious issues dividing the Catholic and Protestant communities in North Ireland. The issues dividing the Catholics and Protestants remained unsolved and persistently defied solution. Then all of a sudden in an unexpected development, the IRA announced a permanent ceasefire in North Ireland. The announcement took the world by surprise, though politicians and academics were quick to explain away the miracle with a generous dose of practical common sense. Those explanations overlooked a critically important factor in the equation—the rapid economic development and changing social attitudes in and toward the Irish Republic, which have dramatically altered social perceptions and relationships in the region.

When Ireland joined the EEC in 1972, it was considered the “basket case of Europe” with a real per capita GDP one-third less than that of U.K. During the 1970s the flow of emigrants to Northern Ireland, Europe and U.S continued unabated. But by the time the European Union was established in 1993, the situation had changed dramatically. The Irish economy had undergone a miraculous change and Ireland emerged as a top performing country with an average annual GDP growth rate of 10%. Immigration trends reversed and people started coming from the North and other places looking for employment in the South. From 1988 to 2004, total employment grew by 67%. By 2000 the balance of labor movement shifted in favor of immigration into Ireland and the Irish per capita income rose beyond that of the U.K. By 2003 its per capita GDP was 16% higher than that of U.K and more than a third higher than the EU-25 average, with unemployment less than half the average of EU-25.

Prosperity in the South and termination of violence in the North may appear unrelated to a superficial observation, but a deeper analysis reveals a close connection between the two in an economic and psychological sense. So long as Catholics were emigrating into Northern Ireland, the Protestants were slowly losing the small edge they had in numbers. The slight majority the Protestants enjoyed was considered crucial in negotiations for sharing power. The reversal of emigration meant that more workers were going south than moving north. Till the year 2000, the U.K was the favorite destination for Irish emigrants. But in the first decade of the 21st century the trend has reversed and the immigration into Ireland from U.K is three times higher than in the other direction. Such a reversal of the emigration trend has impacted on the traditional attitudes of superiority and inferiority that used to mark the relationship between the two communities. Psychologically it boosted the self-confidence and self-esteem of the Irish people.

Ireland’s performance is all the more remarkable when considered in relation to the per capita GDP of North Ireland, which is 23% lower than the U.K. average. Ireland’s economic take-off elicited the admiration of Ulster, U.K and the rest of the world. That astonishing accomplishment absorbed all the energies of its people and channeled them into productive activities, leaving neither time nor inclination to support or encourage violence. The nation became too busy with its success to trouble others. Its success attracted people from Ulster who wanted to share in that success.

The successful resolution of the Irish conflict offers valuable lessons for other conflict-prone countries and regions. Economic development and economic security can be an effective remedy for military and political conflicts. Indeed, much of what we take to be irre-

concilable religious and ethnic hatred thrives on a substratum of poverty and is aggravated by the absence of economic opportunities for those who seek through education to escape it. It needs to be mentioned that peace has been achieved in Ireland without actually reconciling the political and religious differences between Catholics and Protestants. These differences remain essentially unresolved, but the resort to violence as a means for addressing them has been abandoned.

Ireland's accomplishment demonstrates the validity of another principle also. The levels of development the most economically advanced nations have achieved over centuries can be replicated by other nations very quickly, now that it has already been done elsewhere. In practical terms this means that the most economically backward nations can develop quickly to overtake the traditional leaders, as Japan and South Korea did in the past and China and India are in the process of doing today. Ireland's greatest achievement is not the elimination of violence and social unrest. Rather it is a standing contemporary example of how great is the untapped potential for rapid human social advancement, once human beings become aware of the opportunities and release their energies to avail of them. Ireland offers a call to humanity to brush aside its age-old grudges, petty squabbles, festering resentments and competitive zero-sum perspectives and seize the opportunity to dramatically accelerate the pace and scope of human development globally.

More than practical examples, the world needs a theoretical framework—a comprehensive theory of social development—that gives full theoretical weight to the unlimited productive potentials and creative capacities of modern society. The economic and military mobilization that Allied nations achieved during World War II shows the untapped social capacity for organization. Humanity already possesses the knowledge, resources and technology needed to rid the world of violence, unrest and poverty in no time, should it awaken to the available opportunities. Today there is a glut of money in the world. Since 1980 the world's financial resources have risen by more than fifteen times. Not many nations are using more than a fraction of the available technological resources at their command. Japan's rise is an illustration of its cultural powers. England surviving the Nazi onslaught and eventually defeating Germany illustrates the power of psychological stamina. The European Union is a good demonstration of the benefits issuing from forging positive international relationships. The U.S illustrates the power of combining technology with practical organization in a free atmosphere that is conducive to individual development. The Internet surpasses all these, as it combines technology, organization, social networking and individuality into a new global organization of unparalleled power. Whatever be the present level of a country's development, a harmonious blending of its economic, technological, cultural, educational and physical resources can launch that country on a course of development far beyond what Ireland has achieved.

3. An Elephant Divided

Like Ulster, the Kashmir problem and the on-going tension between India and Pakistan are relics of a colonial past and the scarred divisions left by the collapse of Imperialism after World War II, an observation more generally applicable to conflicts in the Middle East and Africa as well. An insight into the possible resolution of the confrontation between India and

Pakistan over Kashmir arose from an unexpected source when a joint ICPF-MSS research team sought to assess the likely economic impact of the dismemberment of the Soviet Union. The team was surprised to discover that no economic studies had ever been conducted to model the potential impact of a breakup of the country on living standards among the Soviet republics. A Russian expert's prediction that it would cause a decline in per capita income in the successor republics by as much as 50% met with disbelief. His prediction proved valid. Between 1990 and 1995 the real per capita income of these countries declined by more than 40%.

In 2000 this same study group applied its understanding in the reverse to determine what would be the economic impact on Kashmir, India and Pakistan, if full trade relations were restored between the two countries in an atmosphere of freedom and peace. Studies had been undertaken previously about the mutual export potential of both these countries. But a full assessment of the benefits of economic integration between India and Pakistan had never been done, because it was widely perceived that economics had little or nothing to do with the conflict—the same reason it was rarely asked in Ireland or Palestine or other regions wracked by chronic violence. Remedies need not be directly related to causes. Overweight caused by overeating can be tackled by more exercise, which is not directly related to the cause. But there is an indirect connection. Overeating means excess intake of energy. More exercise offsets that by inducing greater consumption of energy. Society can also be viewed as an energy system. When excess social energies are not positively channeled, they acquire a destructive direction. A political problem tackled by an economic approach is one such indirect solution.

Since gaining independence from the British in 1947, India and Pakistan have gone to war four times in 1947, 1965, 1971 and 1999. The problem was seen to be mainly religious, in spite of the fact that there are roughly equal numbers of Muslims living in the two countries. Later it acquired political dimensions also, when authoritarian Pakistan allied itself with democratic America, while democratic India allied itself with autocratic Soviet Union during the Cold War. But the conflict between India and Pakistan has deeper origins than these religious and political overtones. It stems from the divisive caste system prevailing in India from ancient times, which labeled 25% of the population as social outcasts relegated to abject poverty. Islam, which arrived with the Moghuls, and Christianity, which arrived with the Europeans, offered the outcasts an opportunity to escape from poverty, ignominy and exclusion through religious conversion. Urdu, the language of the invading Moghuls and their descents, is spoken by only about one-third of the Muslim population of the sub-continent, indicating the magnitude of the conversions that took place to Islam because of the social and economic inequalities perpetuated by caste system. Though Islam gave them respectability, their economic condition remained much the same until the British quit India. Mahatma Gandhi took an immense effort to uplift the scheduled castes and his service to the downtrodden sections of the Indian population must be rated as equal or if not greater than his contribution to the freedom movement. The Muslims' demand for a separate nation can be seen as the erstwhile excluded population's demand for social equality and respectability.

A similar background is there to the Kashmir problem. At the time of Independence the Hindu king of Kashmir, a state with a Muslim majority, wanted to remain separate and join neither India nor Pakistan. The move prompted Pakistan to attack Kashmir and the resulting

cease-fire led to a division of Kashmir into Indian-held and Pakistan-held portions. When the Russians left Afghanistan unable to withstand harassment by fundamentalist forces, these religious warriors became jobless. They readily switched over to fighting a holy war for liberation of Kashmir, where they were promised good pay and maintenance. Rising violence was directly related to rising cross-border infiltration of Pakistani-trained militants. India feared that Kashmir may ask for out-right independence, if the separatists force gain control of the government, prompting interference with the electoral process.

Terrorist violence began to weaken the local economy. The stream of educated youth coming out of the colleges faced bleak employment prospects and took to violence to vent their frustration. Educated unemployment rose markedly through the nineties and the ranks of the terrorists swelled by addition of the educated unemployed.

Viewed strictly in narrow religious and political perspectives, the Kashmir problem and the conflict between India and Pakistan appears as an insoluble problem as the Irish problem did a few years ago and the Arab-Israeli conflict does today. *But approached in social and economic terms, rapid economic advancement based on full exploitation of the untapped potentials of economic integration can wipe out the underlying source of social tensions between the two countries.*

This proposition was tested by the ICPF-MSS research team when it approached the Government of India in 2000 with a proposal to explore the potentials for wider economic cooperation between the two countries. Less than two years after Pakistan's surprise attack on Kargil and at a time when cross-border infiltration of extremists and terrorist violence in Kashmir were at a peak, the idea that the Indian Government, a coalition headed and supported by Hindu extremists, would seriously consider efforts at peaceful reconciliation with a military government in Pakistan headed by the general who spearheaded the Kargil War was itself almost an unthinkable proposition. In fact, the proposal received a warm welcome in both New Delhi and Islamabad. Plagued by low growth and high educated unemployment, Pakistani officials were more interested to learn about the achievements of India's software industry and the prospects for cooperation in this field, than to discuss questions of politics and religion. The Federated Chambers of Commerce of both the countries agreed to jointly explore and study the wider economic potentials of cooperation, including shared exploitation of water, power and natural resources and transportation.

One of the most promising potentials explored in 2000 was a proposal to address India's burgeoning energy requirements through collaboration with Pakistan on what has become known as the Peace Pipeline. The proposal called for bringing gas from Iran to India through Pakistan to meet India's burgeoning energy requirements, which were slated to triple by 2020. The proposal had been summarily rejected by numerous governments because of the high perceived security risks and unwillingness to depend on Pakistan for meeting the country's essential energy needs. The possibility of attractive transit fees for Pakistan is a very good temptation for that country to go ahead with the project. Negotiations between the three governments removed the major hurdles to the project, until US concern over possible nuclear weapons proliferation by Iran led to intense pressure on India to consider alternative ways to meet its energy needs.

4. Guaranteed Employment

The truth about the linkage between rising expectations and social unrest is further demonstrated by other sources of internal violence in India. India witnessed secessionist violence in Punjab during the 1980s and on a continuing basis in Assam. Since 1947 armed left-wing extremists called Naxalites have exploited the resentment of impoverished, landless tribal communities promoting violence in a number of states, including West Bengal, Andhra Pradesh, Jharkhand, Chhattisgarh and Bihar. Naxal violence is clearly based on economic deprivation, rather than religion or politics. The annual death toll in Naxal-related violence averages about 1500 lives in recent years.

During the past three decades of Naxal unrest, the central and state governments have tried in vain to tackle this problem effectively. Then in 2005 a more ambitious program to eliminate the economic roots of social unrest was launched by the newly elected Congress Government, which passed the National Rural Employment Guarantee Act (NREGA), a landmark legislation guaranteeing a minimum 100 days of employment in public works projects to people living in 200 of the poorest districts in the country. In 2008 the scheme was extended to all the districts of the country. Despite its many deficiencies, NREGA is India's most comprehensive effort to wean people from social unrest by trying to ensure jobs to the poorest of the poor. The government's offer of guaranteed employment opportunities is not a mere welfare scheme. *It is the main plank of a strategy to neutralize social unrest in the country by channeling the energies of the discontented into productive activity. Psychologically, it provides the poor with a minimum sense of security and reduces the incentive to violence.*

5. Palestine

Development is not merely a question of material accomplishment. It is an organic social process which follows a natural evolutionary course. Social unrest is an inevitable phase of that evolution. What appears as unrest when seen from a partial perspective acquires a different meaning when we view development as a whole. The main thesis of this paper is that rising expectations release enormous amount of social energy that spills over into social unrest when no suitable positive channels are available to utilize it for social advancement. Harnessing that energy for constructive purposes requires appropriate social organizations and productive skills. Over the last 200 years America harnessed the energies of a heterogeneous, impoverished immigrant population in an atmosphere of freedom through emphasis on innovative economic organization and education to build the world's most prosperous society. A clear focus on prosperity as the main goal and the intense cultivation of work-related values directed those energies for national prosperity. The Americans had to invent new technologies and organizational arrangements to achieve their goals. But developing countries today need only adapt the available technological and organizational resources to their requirements, making it possible for them to dramatically abridge the time required for achievement.

This thesis meets its most severe test in application to the peaceful resolution of the conflict in Palestine, a problem that traces its lineage back to Biblical times and combines in a single issue all the political, religious and economic strands that fuel social unrest in the

world today. Trying to untangle the past record of right and wrong, claims and counterclaims will not lead to a solution. A good faith effort to find a solution should not start there. It should begin with a clean slate and examine the options for the future. Palestine is equipped with all the human, economic, technological, organizational, educational and physical resources needed to achieve rapid development and become a showcase of prosperity. The whole world has a stake in resolving this problem rapidly and permanently, since much of the instability and violence in the world sprouted from the seed of Palestine and claims continued justification today because of the unresolved problems in this region. For that reason, the whole world can and should contribute to the solution, and the UN is justified in demanding or even compelling the cooperation of all the parties concerned.

Two decades ago an Israeli Prime Minister remarked that Palestine has all the essentials required to become another Singapore. Had that remark been heeded, the Arab-Israeli conflict could have been permanently resolved by now. Even now it is still practicable. Singapore raised its real per capita GDP from about \$2000 to \$22,000 in 50 years (measured in constant 2000 dollars PPP). During the same period the GDP of Palestine rose only from \$1000 to \$5000 dollars before sliding down by 40% after the outbreak of the second intifada in 2000. Available development experience shows that Palestine can be turned into another Singapore by 2020 or even sooner. Unless prosperity comes to Palestine, weaning the people from violence is an unrealistic proposition. Prosperity would divert the energy from protest and agitation to productive engagement.

Experts in Middle Eastern affairs may point to numerous attempts to use economic incentives to resolve this conflict, which have failed to make headway, but past attempts have been far too modest to succeed. Development experience shows that potential gains must be very substantial before people will break existing patterns of thought and behavior. Much of the money that has been injected into the Palestine economy has come in the form of aid, which saps local initiative, fosters a sense of dependence and resentment, and is highly susceptible to corruption. Investment, *not aid*, is the solution. What is required is a coordinated effort of the international community backed by a determination to convert Palestine into a Garden of Eden. The financial cost would be miniscule by international standards. The gains, even in direct monetary terms to the world-at-large, arising from reduced violence and security risks would repay that investment a hundred-fold.

Enough studies have already been done to identify the potential. One British study published in 2007 identified five essential components for economic recovery of the region. Even this modest scheme would double per capita GDP in the region in five years and restore the higher living conditions prevailing in the late 1990s.²

Another study done by the Peres Centre in 2006, based on intensive discussions with Israeli and Palestinian business communities, projected a larger vision. Identifying specific opportunities for economic cooperation and integration in agriculture, textiles, tourism, IT and other sectors, the study concluded that Palestine could increase its exports 20-fold and triple its GDP in a span of 5 to 10 years. More importantly, the number of employment opportunities in Palestine could double. Employment is the real key to eradicating social unrest in the region. This plan would have virtually eliminated unemployment and added 10% more

to Israeli GDP. This did not actually happen for various reasons, but the potential to make it happen was very real. Instead, during the last decade unemployment rose from 14.3% to 23.6%, providing the ideal kindle for violence.

These studies represent a good starting point. But in order for any viable program to be initiated and sustained, the vision and the goals must be far greater, otherwise it is likely to remain a non-starter. Halfway measures will not suffice. The goal must be to improve living standards in Palestine to the level of Israel or Dubai, which is practicable if the unrealized potentials are fully tapped. It would convert Palestine from a festering wound of discontent and extremism into an inspiring model for the whole world. Nor is such a notion utopian. Ireland, a country of roughly equivalent population, did it on its own initiative and resources over the past two to three decades. It can be done here in a much shorter time. Rapid social development will channel the energies released by rising expectations into productive activities for prosperity and replace the painful recollections of the past with the anticipation of future accomplishments.

Stability is essential for this accomplishment. Rapid economic development within a certain range is inversely related to political freedom, as the example of Singapore illustrates. Singapore achieved its remarkable performance by keeping social energies under control, while rigorously implementing government programs. In the given context, the UN is in a position to impose that stability in Palestine as an essential step toward world peace and global development.

The key to speeding up development is social organization. Potentials may exist, awakening can occur and energy may be released. But social organization is essential to convert the potentials into actualities and deprive instability of the fuel which sustains it. That requires providing the essential infrastructure for governance, quality education and economic development. The UN can take upon itself the responsibility for providing that infrastructure and ensuring that stability prevails, while development activities are being carried out. Organization has to be supplemented by productive skills. A comprehensive survey of skills required for increasing GDP ten-fold will reveal a big gap between what is required and what is available. Preparing people with the necessary skill to fill the gap will generate a centripetal force that will attract more opportunities to the region and facilitate each step of its development.

There is no single solution to the Palestinian problem. There are many solutions that can all be applied to the situation in a mutually reinforcing manner. When this approach is adopted, current problems can be converted into opportunities for the development of the region, just as the inferiority complex of the Irish became an impetus for progress. The fervor and intensity that has engaged the inhabitants in incessant warfare over the Promised Land can be redirected to bring peace and prosperity to the entire region. The Irish example reminds us that intractable religious and political issues need not be permanently resolved at the outset. Rapid economic development can alter the social attitudes and perceptions as well as the ground realities that make arriving at final solutions so difficult at the beginning. The fact that a number of European countries have surrendered some of their sovereignty to a common organization is the culmination of 50 years of cooperative interaction amongst erstwhile enemies, not the original pre-condition for their working together.

6. Laws of Development

Specific applications of the principles given below will vary from country to country and from region to region. Nevertheless the basic features of the principles are universal and applicable anywhere at any time. A few of the most salient of those principles are summarized below:

1. Society is in constant movement and that movement seeks progress. Society self-regulates its movements with regard to production, consumption, communication and knowledge acquisition and dissemination, and is always trying to raise these to higher levels of complexity in order to continuously make its organizations more efficient and effective.
2. Society evolves by raising its consciousness and becoming aware of untapped potentials. It progressively shifts its focus from concrete physical realities to possibilities that are real to the mind. The heightened awareness releases greater energy which is directed towards greater achievements. Social awareness is transformed into results by the development of social organization. Like business and governmental organizations, social organization is the fabric of interconnectedness that enables society to channel its energies to fulfill its aspirations. Organization absorbs in productive activity the energies released by aspiration.
3. Society organizes itself at successively higher and higher levels. First it strives for bare survival and preservation, then for growth and expansion, then for development of higher levels of productivity and complexity, then finally for the evolution of new and higher forms of social activity and social organization. The transition from hunting-gathering to agriculture, trade, industrialization and urbanization traces some of these steps.
4. The only lasting form of development is self-development. Development that comes through the aid of others may give temporary relief but will not generate the attitudes, skills and organizations needed for permanent development. The policy of aid is inconsistent with the principles of development. The Marshall Plan helped war-torn Europe to quickly rebuild itself, mainly because those nations were already developed and had the necessary social organizations and infrastructure. In most cases aid has only deterred development.
5. Learning by trial and error is a slow and wasteful process of learning, which is the prevalent mode of learning when knowledge about the development process remains subconscious. When people acquire a conscious knowledge of the development process, they can learn quickly from the experience of others without having to pass through every experience countless times before they acquire knowledge.
6. Society is an organic, integrated whole. Problems develop when disharmonies emerge between parts of the whole. Looking at a problem from the perspective of the whole can eliminate the disharmonies among the parts and, thus, solve the problem. Solutions are available at many levels—physical, vital and mental.³ Problems turn into opportunities when we shift the focus from the physical to the mental. The Peace Pipeline is a good example. Diplomacy refines the physical urge for violence into vital negotiations across the conference table. Law turns vital negotiations into a set of mental principles. Military

problems can be given political solutions and political problems can be given economic solutions, etc. When solutions are given from higher levels, they tend to be more effective and longer lasting.

7. A solution that can be meaningfully applied in one place cannot be applied in another place unless the essentials of the problems are the same. The essence alone is applicable at all times and at all places. Forms and appearances are changeable and can be given up, but the essence of the past experience has to be retained. Specific strategies applied in one location can be successfully applied in another location only when the specifics match. Liberal democracy that was cultivated in Europe was transplanted to North America more successfully than to parts of Asia, because the political culture of Asian countries differed very much from the culture of liberal individualism that evolved in European countries.
8. Most nations have developed on the strength of one or few capacities such as freedom, sea-faring (England), quality of industrial production (Germany), technological innovation (USA), natural resources (middle East), social structure (Europe), intellectual resources (China), cultural energies (Japan), etc. A strategy that capitalizes on all of the cultural, political and economic capacities of a nation can take it to the leading position in the world.
9. Resources are created by the mind when it recognizes something as valuable and useful. The potential resources available to any nation are far greater than what any nation is using. These resources are in the form of knowledge, human capabilities, organization, technology, education, social and cultural resources etc. Though the value of natural and technological resources is widely acknowledged, the power of cultural and organizational resources is not very much appreciated. The phenomenal mobilization during war-time in America is an example of the power of organizational capacities that are normally not fully mobilized during peacetime. More than physical or technological resources, it was psychological resources stemming from the value of self-reliant individuality that propelled America's rise to world leadership.
10. No nation need take centuries to attain high levels of development. Even backward nations can develop quickly, as Ireland and the Asian Tigers have shown. America compressed ten centuries of European development into one century. It is true that many centuries were required for the world to develop all the various aspects that contribute to a high-level of accomplishment—productive skills, technology, organization and education, etc. Each aspect was developed in isolation by a few nations and later spread to others. Now that the parts have all been developed, they can be quickly combined for the growth of the whole. The world has all the knowledge, information and experience needed.
11. Peace is not merely the absence of violence. It is a positive condition of stability and harmony that can be established at various depths in society, founded in turn on production, distribution, money power, organization, social cohesiveness and cultural emotion. The deeper the foundation, the more stable and lasting the peace.
12. Social evolution is moving progressively from smaller social units such as family, village, tribe, caste, ethnic or linguistic group and nation to a single, integrated global society. Language, law and money are social institutions that have played a vital role in linking

people together harmoniously and productively within larger social units. Today the internet is emerging as the first truly global social institution and infrastructure for an integrated global society.

7. Global Peace and Development

The principles and process of development are the same for the individual, family, organization, nation-state and for the whole world. At each level peace and stability are indispensably required for development. When the activities of the smaller unit are aligned with that of the bigger unit, the scope for development is vastly enhanced. The evolution of city-states and feudal kingdoms into nation-states illustrates the power that issues from coordinating and integrating activities at a higher level. Today it is not just nations that have an opportunity to advance rapidly. Humanity as a whole is poised for a quantum leap forward, when it moves beyond the limitations imposed by the nation-state as the European Union is doing. Viewed in terms of global social potential, the opportunities for everyone are exponentially greater.

A few important initiatives can release latent human aspirations and energies and provide a stable and peaceful foundation for society to evolve to higher levels of global organization.

- Abolish veto power in the UN Security Council as the first step towards developing a truly democratic form of global governance.
- Abolish nuclear weapons to remove an underlying source of anxiety and instability.
- Establish an International Food Corporation to eliminate food scarcity and to prevent speculation in food which threatens the lives of a billion people.
- Guarantee employment to thereby eliminate unemployment which is a major source of violence and social unrest.
- Establish regional currencies along the lines of the Euro as the first step toward development of a single world currency and a world central bank which will eliminate currency speculation and global financial instability.

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Brief History of Alternative Dispute Resolution in the United States

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Editor's note: This issue of Cadmus focuses on the power of organizational innovation to address social problems and enhance social effectiveness. The development of law marks the evolution of civilization. Survival of the fittest is the law of the jungle based on strength alone. As society developed, rule by the governing principle of physical strength on the battle field was progressively supplanted by the rule of social authority as determined by those in power. Monarchy, dictatorship, plutocracy have gradually given way to principles of justice as rule of law and administered government through legislation and the courts. The settlement of disputes based on rationality and a sense of fairness marks a still higher evolutionary stage in which the authority of the state is progressively replaced by reason and values. The growing prevalence of various mechanisms of alternative dispute resolution denotes different stages of that evolutionary advance.

Although widely known for its propensity for litigation, the USA has one of the world's most advanced and successful systems for settlement of disputes outside the formal legal system through mechanisms of mediation and arbitration. More extensive use of this system internationally and by other countries can dramatically enhance the speed and quality of social justice globally. Usage within the USA varies widely. About 11 percent of civil cases in Northern California are settled by mediation, compared to around 2 percent in eastern New York and 0.5 percent of civil cases in Europe. About 10 percent of divorce cases in Germany are submitted for mediation.

The growing complexity of modern life has multiplied the burden on the legal justice system, rendering it increasingly inadequate and ineffective. In year 2000 the Italian government was required to pay €600m to litigants claiming damages caused by trial delays. The potential importance of mediation is illustrated by the fact that at the present pace India will not clear its current backlog of cases until 2330. This article is by a very experienced American trial and arbitration attorney and practicing mediator who has extensive experience working with this system.

The wide range of innovative mechanisms commonly employed to settle disputes outside the courtroom is illustrative of the larger potential for organizational innovation in other fields designed to enhance governance nationally and globally. Alternative Dispute Resolution (ADR) in the common law tradition has its origins rooted in English legal development. As early as the Norman Conquest, legal charters and documents indicate that English citizenry instituted actions concerning private wrongs, officiated by highly respected male members

of a community, in informal, quasi-adjudicatory settings. In some instances, the king utilized these local forums as an extension of his own legal authority; rather than adjudicate a suit via the more formal king's court, the king would simply adopt the decision of a local, but highly respected layperson without ever "reaching the merits" of the suit, creating one of the first forms of arbitration. In some sense, then, common law ADR has been around for centuries.

In the United States, commercial arbitration existed in the early Dutch and British colonial periods in New York City. "Pilgrim colonists, convinced that lawyers threatened Christian harmony, scrupulously avoided lawyers and courts, preferring to use their own mediation process to deal with community conflicts." When disagreements occurred, a body of male members of the community would hear claims, determine fault, assess damages, and ensure that the parties reconciled with one another. For much of the colonial period, these informal arbitrations were the norm.

Shortly after independence and the creation of a new government, ADR found its place in a number of applications, albeit sporadically. For instance, in the Patent Act of 1790, Congress provided for an arbitration system of competing patent claims. In such a dispute, the Act authorized the creation of an adjudicative board, consisting of one member appointed by each patent applicant and another by the secretary of state. Decisions by the board were binding and, should an applicant opt out of this arbitration, the other applicant's patent would be summarily approved.

While these early attempts at ADR were essential to its development in the United States, ADR did not receive formal institutionalization until the late-19th Century. For instance, "[i]n 1898 Congress followed initiatives begun a few years earlier in Massachusetts and New York and authorized mediation for collective bargaining disputes." Special mediation agencies, like the Board of Mediation and Conciliation for railway labor and the Federal Mediation and Conciliation Service ("FMCS"), which are still operative today, were formed to carry out negotiations regarding employment. At this stage of ADR's development, it was perceived of less as an alternative to litigation and more as a tool to avoid unrest, strikes, and the resultant economic disruption.

Early in the 20th Century, states began taking a concerted interest in systematic ADR as a litigation alternative. In the 1920s, over a dozen states passed modern arbitration laws and Congress enacted a federal cognate, the Federal Arbitration Act. All of these laws significantly improved the nature of U.S. arbitration by:

- Making agreements to arbitrate future disputes legally valid and enforceable and revocable only as any contract could be revoked;
- Closing the court to parties to an arbitration agreement by requiring them to comply with their agreement;
- Authorizing courts to enforce arbitration awards; and
- Authorizing courts to appoint arbitrators and otherwise expedite arbitration when one party has failed to move forward with the agreement to arbitrate.

While all of these were positive developments, the most innovative was the expressed authorization for courts to enforce ADR remedies.

With the enactment of statutory ADR systems, lawyers and entrepreneurs realized the importance of providing nongovernmental voice to ADR-related policymaking. In 1926, the American Arbitration Association (“AAA”) was formed to provide guidance to arbitrators and parties as to ADR methods and time-tested procedures. Using the collective expertise of individuals in the field, AAA developed and promulgated rules on the proper methods for arbitration. Over the years, AAA has become the premier organization promoting and nurturing business arbitration in the United States.

Throughout the 20th Century, ADR grew in popularity as an alternative to the litigation process. At the governmental level, state and federal governments began utilizing ADR in a number of programs. For instance, during the 1970s, the Department of Health, Education, and Welfare was designated as the administrator of the Age Discrimination Act of 1975, to resolve claims of age discrimination in federal workplaces. To facilitate speedy resolutions of the matters, the Department enlisted the help of FMCS to mediate complaints under the new law, a process that became routine in 1979. At the academic level, the 1980s brought significant interest from legal experts in the uses of ADR in a variety of fields. Universities and law schools began introducing courses and degrees in ADR related topics. By the turn of the 21st Century, an American Bar Association survey showed that the majority of law schools had some form of ADR related program, including extracurricular competitions.

Today, arbitration exists at all levels of the U.S. legal profession. Law firms regularly employ retired judges or AAA certified attorneys with ADR expertise to offer mediation, negotiation, and arbitration services to individuals and businesses. In 1979, retired Judge Warren Knight of California started the Judicial Arbitration and Mediation Service, an organization dedicated to providing law firms, businesses, and individuals with access to judges willing to serve in ADR capacities. And in 1995, database providers, like Martindale-Hubbell, began publishing routinely-updated directories of ADR practitioners, their firms, and areas of practice, affording more individuals access to ADR related services. Thus, ADR as a legal system has become firmly entrenched in the United States.

1. Forms and Types of ADR in the United States

ADR comes in many iterations in the United States, ranging from highly formalized, quasi-judicial proceedings to informal, conference room conversations. In each of its forms, ADR offers U.S. clients and practitioners numerous options to obtaining non-litigation relief. The types of ADR available in the United States can be divided into three general categories: adjudicative, evaluative, and facilitative.

1.1 Adjudicative ADR

In an adjudicative ADR proceeding, a quasi-judicial facilitator, called the “neutral,” serves as the adjudicator or decision maker. This participation by an outside, impartial third-party is often desirable to parties unwilling to negotiate, yet preferring to avoid formal litigation. Additionally, while adjudication through the U.S. judicial system “always results in a binding decision,” adjudicative ADR can provide various results, whether “binding, non-binding, or advisory.”

Arbitration: Arbitration is a form of adjudicative ADR that is generally conducted by a single arbitrator or a panel of three. Typically, arbitration is used in situations where the par-

ties cannot agree on the facts of a dispute or the conflict is purely monetary. Arbitration is also regularly utilized in cases in which a matter is highly technical, requiring an expert decision. Arbitration proceedings are often much more formal than other forms of ADR, mirroring adversarial, court-like proceedings. Often attorneys participate, witnesses are called, evidence is taken, motions are filed, and post-hearing briefs are submitted. Where the parties have previously contracted for arbitration, decisions are binding. Depending on the agreements entered into by the parties before arbitration and the relevant law of the jurisdiction (federal or state), an arbitration decision may be appealable to the court system.* Parties to arbitration must agree on applicable rules of procedure, and the amount of discovery allowable. In situations in which the parties have agreed to a three person panel, most often each party will select its own arbitrator and then agree upon a third neutral.

Neutral Fact-Finding: Another form of adjudicative ADR is neutral fact-finding. In situations in which parties to a dispute cannot agree on the facts or technical expertise is essential to their determination, the parties may employ a third-party to inquire into the underlying particulars of a case. This form of ADR may be employed at the outset of a matter or during litigation; indeed, some trial judges may order the parties to appear before a neutral fact-finder to resolve factual issues. In some jurisdictions, a final decision maker, like a trial court judge, may be bound by the neutral fact-finder's determinations.

1.2 Evaluative ADR

The second category of ADR, evaluative ADR, is a process in which lawyers and litigants present their version of a particular case and receive feedback on the strengths and weaknesses of their claims and arguments. In many of these proceedings, the parties are not yet willing to discuss a settlement and an evaluation serves to provide context as to each party's bargaining power, both to reaffirm particular beliefs and to dispel unreasonable expectations.

Peer Evaluation: In peer evaluation, attorneys for each party appear before a neutral attorney or panel of attorneys experienced in the subject matter of the dispute, and present the case. In many instances, the panel may offer recommendations for argument development, may point the parties to issues not previously considered, and provide recommendations for settlement. Even if a settlement is not reached, the parties' decisions will be informed by these recommendations throughout any future litigation.

Lay Evaluation or Summary Jury Trial: Lay evaluation or summary jury trial ("SJT") is essentially an expedited and abbreviated jury trial. Attorneys for both sides of the dispute present to a pool of possible jurors opening arguments, a summation of the evidence one witness each and closing arguments. On this basis, the "jury" deliberates and returns a verdict, with time for the parties to then poll the panel. This proceeding allows parties to get a sense of how an actual jury may resolve a case.

Judicial Evaluation: Judicial evaluation is similar to an SJT, but in place of a jury it utilizes a retired judge who only provides feedback to the parties on the merits of a dispute.

Specialist or Expert Evaluation: This proceeding is often employed where the conflict raises highly technical issues, requiring opinions from experts in the field, such as in con-

* For a discussion of the intricacies of appellate proceedings for arbitration see Ian Maeneil, Richard Speidel and Thomas J. Stipanowich, *Federal Arbitration Law: Agreements, Awards & Remedies Under the Federal Arbitration Act* (1994).

struction, computer design, or biomedical technology matters. The parties may agree beforehand that the expert's determination of the issues is definitive and this may be used as common ground in a settlement discussion or trial. The informality of the proceeding may engender open dialogue between the parties and the experts, without the pressure to "one up" one another.

1.3 Facilitative ADR

In facilitative ADR, the neutral does not render a binding decision nor does he or she actually "reach the merits" of a dispute. Instead, a neutral serves more as a referee or advisor to the parties, to encourage discussion, dialogue, and settlement. The three most common forms of facilitative ADR are mediation, conciliation, and consensus building.

Mediation: Mediation is the least adversarial form of ADR. The mediator helps the parties identify real issues, frame the discussion, and generate options for settlement. The goal of mediation is to provide a "win-win" resolution, enabling both parties to obtain a satisfactory remedy. Mediators come from a number of different backgrounds, but most are practicing attorneys, familiar with the underlying subject matter of a conflict. Mediation can be utilized at all stages of a dispute, whether before or during trial or throughout the appellate process.

Of all the types of ADR, "[m]ediation has emerged as the primary ADR process in the federal district courts."^{*} Most federal jurisdictions offer some form of mediation and many require it. Mandatory mediation either requires parties to engage in mediation in certain cases or creates disincentives for parties to decline it. The cases in which parties are often required to participate in mediation include family law cases such as divorce proceedings, farm mortgages cases, collective bargaining disputes, agricultural producer-distributor bargaining, and medical malpractice cases. In fact, "[m]ediation is most frequently mandated for those disputes . . . which courts despair of handling well and whose continuation is commonly thought to affect those not at the bargaining table." Even when parties are not required to engage in mediation, courts may nonetheless have incentives to encourage mediation, such as imposition of costs or the leveling of sanctions on parties that opt-out. Some courts have even gone so far as to find that failure to engage in mediation deprives the court of subject matter jurisdiction to hear the parties' case.[†]

Conciliation: Conciliation is very similar to mediation, with much less formality. While mediation may entail regular meetings between the parties, conciliation may be as informal as a telephone call. Moreover, conciliation usually assumes that the parties have already achieved some form of reconciliation and that the relationship has been mended, requiring only that the details of the matter be resolved.

Consensus Building: Consensus building may be thought of as mediation on a large scale where a large number of parties are involved and representatives may be charged to appear and obtain decisions on behalf of their constituencies. Consensus building may proceed over an extended period of time. In these situations, because of the sheer number of parties involved, individuals may not attend the actual deliberations, but send a representative.

^{*} Elizabeth Phlapinger & Donna Stienstra, *ADR and Settlement in the Federal District Courts* 4 (1996).

[†] See *Blackmon-Malloy v. United States Capitol Police Bd.*, 338 F. Supp. 2d 91 (D.D.C. 2004).

2. Conclusion

While ADR as a system has gone through a number of iterations in the United States, the ultimate purpose of the many types of ADR remains similar to that of the early common law equivalents—to provide parties with a satisfactory resolution of a conflict short of formal court proceedings. It is for this purpose that ADR continues to be an important and popular option for individuals and businesses in the United States.

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The Turn Towards Unity: Converting Crises into Opportunities*

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Abstract

Human progress is stimulated by external threats and pressures. Values distilled from long experience possess the essential knowledge and power needed for continuous development and evolution. Successive waves of foreign invasions following the collapse of the Roman Empire coalesced the tribes of England into a nation state. Centuries of incessant warfare finally compelled the countries of Western Europe to evolve a regional union within which war has become unthinkable. Most recently, the rising incidence of terrorism has compelled national security institutions to forge a network for global coordination unimaginable during the Cold War. Challenges met are converted into opportunities. Opportunities missed degenerate into problems. All crises are psychological in origin. The remedy always calls for a change of attitude and values. The greatest threats confronting human beings today do not come from external aggressors. They are the result of problems that affect humanity as a whole and can only be addressed collectively by the entire human race. International financial instability, unemployment, terrorism, proliferation of nuclear weapons and climate change are indications that humanity is entering a higher phase in social evolution that compels us to evolve more effective instruments for governance at the global level. No nation or group of nations acting on its own can protect itself from these threats. Effective action to address these issues is unlikely to come from governments whose source of power and very identity are based on national sovereignty and separateness. Mechanisms for global governance will not be effective unless founded upon universally accepted values in fact as well as in principle, a condition violated by the undemocratic character of the UN system. Power relents only in the face of greater power. Power that exceeds that of the five permanent members of the Security Council can only come from representatives of humanity as a whole. A confederation of transnational organizations with shared values and common concerns can formulate a vision and plan that will constitute the seed for future world government. Organizations have evolved to the point where they can play the pioneering role traditionally played by pioneering individuals in the past, but even such organizations must depend on a core group of aspiring individuals to point the way.

1. Crises and Opportunities

Society is founded on the distilled essence of millennia of experience. It takes centuries

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of experience to create a little history, centuries of history to create a little civilization, and centuries of civilization to create a drop of culture. Universal values are the quintessence of that culture. Spiritual values of freedom, equality, peace, harmony, unity, truth and self-giving are the most precious products of the evolutionary process, for they embody the deepest wisdom of our cumulative experience, the knowledge on which all lasting achievement and sustained progress are founded. Those values are our surest guide to a more perfect future. Values possess unparalleled power for accomplishment.

Experience also teaches us that progress almost invariably arises from the ashes of conflict, crises and, very often, massive destruction. Destruction is destructive of obstacles. Destruction is creative. Hence the irony that the most devastating destruction in human history during WWII has been followed by the most remarkable period of accomplishment. Humanity has developed more during the past fifty years than during the previous five centuries, according to UNDP, and the rate of progress is accelerating. Therefore, we are compelled to acknowledge the mystery that problems and crises give rise to unprecedented opportunities.

At the same time we are forced to acknowledge that opportunities missed often degenerate into problems. Thus, the missed opportunity to found a truly global system of governance in 1945 was followed for 45 years by the Cold War that generated a greater real threat to the future of humanity than all the real wars fought throughout its long history. The irresistible temptation of the victorious nations to unevenly distribute political power in the new dispensation led instead to the fashioning of an effete, unrepresentative system of governance in the name of democracy. Looking back, it is almost impossible to conceive of the logic that compelled informed leaders on both sides to sanction the creation of 70,000 weapons of mass annihilation. Yet this was a 'logical' outcome of the post-war mindset. The physical urge in thought and act is for blind repetition without end until a new crisis compels it to stop.

Once again, after the fall of the Berlin Wall and the Iron Curtain in 1989, unprecedented opportunity presented and was at best half-heartedly embraced. The unification of Europe, establishment of a single world market devoid of ideological barriers, and emergence of the Internet as the first truly global social organization are its finest products. The multiple crises the world faces today are its worst consequences.

2. Psychological History of Human Progress

History records facts. A psychological history reveals the thinking and attitudes responsible for those facts, which alone give us the power to avoid endlessly repeating the same mistakes. Knowledge is power. Psychological knowledge is power to escape from the limitations of the past. All crises are psychological in their origin. They arise from uninformed or misinformed opinion, prejudiced attitudes, exclusive pursuit of narrow self-interests, refusal to renounce a temporary advantage, indulgence of a destructive urge, inability to control a triumphant impulse.

All opportunities are psychological as well. They are created by embracing a higher or wider perspective, a more inclusive viewpoint, the courage to build a fresh future free from the legacy of the past, a willingness to cooperate, an urge for harmony, a sense of fairness, the inspiration of an ideal, the commitment to a value. Thus, millions of impoverished

Europeans, inspired by the ideal of freedom and the value of self-reliance, found the courage and inspiration to give up the settled security of life in their native countries to brave rough seas and settle the American wilderness. It is significant that the most successful American colonies were not founded in the Southern Hemisphere in which European monarchs established crown-administered colonies in quest of gold, but in the northern regions where no gold was found until centuries later. The northern colonies were left to fend for themselves. It was freedom that made America prosperous, not precious metals. Ideals, attitudes and values constitute the principal difference between astonishing achievements and intractable problems.

The nuclear weapon states missed a unique opportunity to rid the world of the most pernicious devices of self-destruction ever fashioned by man. But the five nuclear powers lacked the wisdom and idealism to renounce a temporary individual advantage in exchange for humanity's permanent freedom from a nuclear nightmare. The world's only remaining superpower missed a golden opportunity to pioneer the next stage in global governance. But that required a self-restraint and humility rare among those at the crest of power.

Overlooking the gaping holes in their own half-failed system after the collapse of communism, market fundamentalists of the Washington Consensus proclaimed ideological victory over decrepit, centralized economic autocracy. Swallowing their own propaganda, they discarded the most valuable lessons of the Great Depression and post war decades. The world stands witness to the results of these missed opportunities – chaotic global financial markets, depressed economies, disenfranchised workers, rocketing disparities between rich and poor, the looming threat of environmental catastrophe, youth without dreams, rising levels of social unrest and violence among those who have been left out. The rising of fundamentalism and terrorism are symbols and symptoms of fundamental defects in our own beliefs and attitudes.

Today we face even more threatening crises, which cloak even more promising opportunities. We desperately need to discover the alchemy of consciously transforming crisis into opportunity. The psychological history of recent decades offers all the knowledge we require to effect that transformation, if only we have the sincerity to understand and the will to act on that knowledge.

3. From Threats to Unity

Historically, unity is an adaptive response to a common enemy. Churchill illustrated this process in his *History of the English Speaking People*. After the fall of the Roman Empire, for centuries Britain was subjected to the onslaught of successive invasions by aggressive neighbors – Angles, Saxons, Jutes, Danes and Normans. Each invasion conquered and supplanted the previous ruling tribe. Each new invader was invited or encouraged by warring local barons and the suppressed majority, lured by the hope of casting off the yoke of present tyranny, only to discover the rule of the new tyrant equally or more oppressive than that which it replaced. Is humanity today any better at learning from its experiences? After centuries of recurring conquest, awareness gradually emerged and a common identity was forged among the long suppressed, motley community of successively conquered tribes of Britain. The eventual result was a consolidation of disparate peoples into the united community of the

English under a universally-recognized monarch. Thus, the foundation was laid for the early emergence of Britain as a modern nation-state. It was not commonality of language, race or religion that united the English, but the pragmatic power of values – the values of freedom and unity.

Values are contagious and often surface where we least approve. We revel in our own freedom from subordination to the power of others, yet cry foul when ungrateful others rebel against the gentle yoke of our own superior power. History repeated itself across the Atlantic, when Britain's American colonies came to perceive that only by freedom and unity with one another could they withstand the arbitrary imposition of authority from England or potential threat from other European powers.

Two centuries later, the same ingratitude of the enslaved spurred the emergence of India as a nation-state, a subcontinent which through most of its history had consisted of hundreds of divided and sometimes warring major and minor kingdoms. Eight hundred years of humiliating subjection to foreign rule – first by the Moghul emperors and later by the British traders – forged a culturally united but linguistically, ethnically, socially, religiously and politically diverse people to build a common future based on a common identity. It is as though the fragmentation of Indian society by caste and religion compelled Nature to employ foreign invasion to forge the unity of these people. India's diversity of language, caste, class, religion, race and political grouping – perhaps Nature's greatest experiment with heterogeneity – evolved into Nature's greatest experiment with human unity.

4. Peace as an Emergent Property

Threats and challenges generate opportunities. The UN emerged from the devastation of World War II as humanity's greatest ever conscious endeavor to learn from experience, to transform high ideals into living social values, to convert unprecedented suffering into peace and prosperity. It did succeed in ending the incessant warfare that had made Europe a perennial battlefield of warring peoples for the previous five hundred years. Physical war was replaced by an ever-present, imminent threat of nuclear annihilation, intense political confrontation between opposing ideological blocs, and global competition for allies through the declared idealism of foreign aid and the secret pragmatism of proxy wars. Yet beneath the surface confrontation, the essence of that bloody competitive history gradually coalesced into the idea and eventually the reality of a regional cooperative security system, NATO, and an increasingly united community of nations, the European Union, built on the battlefields of the past. As a result, in the words of a European security expert, "war in Europe has now become unthinkable." That is surely an achievement worth thinking about.

Here too, a great opportunity was only half-seized, leaving behind it inherent weaknesses that have recently surfaced to shake the entire edifice of the nascent union. Spurred by the political and economic triumphs of their mighty neighbor across the Atlantic, yet still possessed by the ghost of divisive nationalism, the members of the EU forged a confederation more similar in most respects to the failed southern Confederacy than the federation of American states it was intended to emulate. The recent financial crisis has exposed the defects in that design, created by political sleight-of-hand to appease nationalistic sentiment at home. The lesson is now apparent. A strong currency union can only be based on a strong central bank

that is a branch of a strong unifying central government. The experience of Europe today foreshadows the experience of the whole world, as it inevitably discovers the desirability and eventual necessity of a single world currency as the basis for a truly global system of governance – an idea seriously contemplated and then short-sightedly abandoned at Bretton Woods in 1945.

5. Global Threats and World Unity

If unity is an emergent property that manifests in response to threats from a common enemy, what possible enemies could pose a common threat sufficient to unify all of humanity? Hollywood's answer is an alien invasion of one sort or another or a wayward asteroid on a collision course with Mother Earth. But no resort to science fiction is required to answer this question. For we already confront those enemies face to face and call them international financial crisis, unemployment, nuclear proliferation, terrorism and climate change. Any one of these very real, present and imposing threats should be sufficient to forge all humanity into a unified, cohesive entity capable of collective response. But will we act even now? Further crises can be avoided, indeed crisis itself can disappear from our lexicon, if only we have the wisdom to consciously embrace and act upon the psychological truths and spiritual values that have brought us this far. Wisdom is to discover that the solution lies within the problem.

6. The Currency of Equality

Human beings have a unique capacity to fashion marvelous instruments for social advance and then to subordinate and enslave themselves as hapless victims to their erstwhile servants. This is the process by which one of the greatest of social innovations – money – has become one of the greatest threats to civilization.

Freedom is the final law, but freedom for whom and for what? The inviolable sovereignty of the nation state is a myth that can no longer be defended. What about the inviolable sovereignty of the individual whose rights are usurped by the dictatorship of majority rule? What about the inviolable sovereignty of humanity, whose sacred commons are raped and pillaged with utter abandon by those with the means who get there first?

In any case national sovereignty has already been defeated by the global marketplace, more specifically by international financial markets. Daily some four trillion dollars in surplus money circles the globe in search of higher returns, moving with the speed of light and callous indifference to consequences of a tornado or tsunami. And like its natural cousins, this social tempest is utterly without conscience, but not without intention. It has an aim which is to maximize self-interest regardless of whose interests are sacrificed as a result. It has a strategy which is to destabilize every certainty, for in uncertainty is found the maximum opportunity for those who know the most and move the fastest. Ranging with the freedom of marauding barbarian hoards against the tiny defenseless outposts of civilization in the past – for history has always favored the barbarian – it seeks out and strikes every vulnerability, uttering the hallowed name of free markets and economic science as it plunders. Never before has human greed had such freedom of action and never has it been less human, for, the soul of the international financial markets is not human; it is a computer running black-box trading algorithms. Nations are defenseless against this most pernicious of all computer viruses, the

virus of financial speculation, which moves with abandon across national borders. Even the strongest of central banks, acting on its own, is hapless to defend itself. But worst of all, the entire world economy is held hostage for an extortionist's ransom. Tens of millions of jobs, which mean tens of millions of lives, are prey to its whims. In the name of free markets, growing numbers of people everywhere are deprived of the most basic of human freedoms, the freedom of livelihood.

Equality does not exist in Nature. Nor does it exist in society. The freedom we so cherish has become a powerful means and resourceful justification for preserving and magnifying inequalities. Yet the wise proclaim equality the most profound of truths, the common basis for our humanity and our spirituality. For freedom without equality is law of the jungle in a tuxedo. Freedom to speculate is a gross misuse of the original purpose for which money was invented as a means to facilitate exchange. Speculation diverts resources from the real economy and undermines its stability. Relative inequalities are no doubt a healthy spur to human initiative.¹ But the rapidly expanding gap between rich and poor in recent times is channeling more and more wealth from productive purposes into a pseudo world where money chases money instead of creating real wealth and welfare.

Investors rightly point out that an effort to regulate or tax money flows and transactions nationally will only encourage the movement of money to foreign markets. Yet the very same group will vigorously protest against efforts to establish uniform policies and tax rates globally, for that would remove the threat which prevents the home government from regulating or taxing financial transactions. Thus the absence of a global financial regulatory mechanism is equivalent to the 19th century land rush in North America, according to the greatest boon to those who came first and staked out a claim for free land. But this time the land is not free. It is the future prosperity of humanity that is up for grabs. The unabashed freedom of the market destroys far more than it creates and undermines human freedom. The wisdom of the marketplace is a myth. Wisdom is knowledge that preserves and enhances human life. Markets do not take cognizance of human welfare.

The unification of global markets necessitates the unification of the regulatory mechanisms for governing those markets, for differences in policy and enforcement are an open invitation for arbitrage. The destructive impact of speculative currency trading can be substantially mitigated without detriment to the global economy by imposition of a uniform Tobin Tax on short term, cross-border currency movements that are not directly related to trade or direct investment. Ultimately, a permanent solution requires a unified global financial organization backed by international law, a world reserve currency and a world central bank.

7. Right to Employment

Money is not the only challenge to national sovereignty. Jobs too have gone global. The traditional theories and policies available to national governments are no longer adequate. Compelled by investors demanding higher profits, multinationals move production facilities to low wage countries, unmindful of the impact on employment and living standards; unmindful also of the enormous benefits they draw from the sophisticated legal, scientific, financial, educational and physical infrastructure of their home base. Raise funds and innovate

at home, create jobs abroad: that is the formula. Topping it off, they demand priority access to government contracts and campaign for lower tax rates with which to finance election of business-friendly candidates. This is plutocracy, not democracy.

Outsourcing has made many types of service jobs equally vulnerable. Visa restrictions can prevent foreign workers from coming in but are helpless to prevent jobs from moving overseas. It is true that this tendency is not new, but it used to occur gradually over decades, providing time for individuals to adjust, younger generations to acquire new skills, and society as a whole to adapt. But the speed with which it now occurs is so rapid that adapting is increasingly difficult and stressful. Unlike a tax that is equally felt by all, the cost of rising levels of unemployment falls disproportionately on the poor and less educated who are least capable of adapting.

Extreme inequality destroys freedom and undermines peace. Rising levels of unemployment aggravate income inequality and increase social unrest and the propensity for violence, as Jasjit Singh argues.² Economically disenfranchised youth in the Middle East are toppling authoritarian regimes, while impoverished tribals in rural India challenge a democratic state by morphing into armies of Naxalites organizing crime and terrorism. We welcome the former and fear the latter. But what will happen if those youth are unable to find jobs in the new dispensation?

Today some 44 million people in OECD countries are jobless. In Spain unemployment tops 21%, including 46% of youth. In the USA alone 25 million people are either unemployed or underemployed and the length of unemployment now averages 40 weeks. Globally the number of jobless exceeds 200 million, a disproportionate number of which are young. This situation would be tragic if national governments were really helpless to address the growing problem, but they are not. They are unable to act because they are held ransom by misconceptions and myths mistaken for scientific truth and pragmatic realism.

The problem of unemployment is the result of policies and priorities held sacrosanct, because they benefit established seats of social and economic power. Change the rules and the results will be dramatically different. Organize to optimize human welfare rather than unbridled growth. A society that can mandate universal education can mandate universal employment opportunities as well. Promote investment in people rather than hedge funds and commodity futures. Develop entrepreneurship and self-employment rather than new weapons systems. Insist on minimum assured income for all rather than tax cuts for the wealthy, who in Germany are actually demanding to be taxed more. Abandon the convenient superstition that more inflation is necessarily harmful in favor of the recognition that more jobless families is absolutely disastrous.

Solution to the global employment challenge necessitates a global modeling of employment markets. It necessitates global coordination of policies and strategies to harness the enormous potential of human capital as well as financial capital to ensure stable employment opportunities for workers everywhere. The alternative is increasing inequality, instability and unrest that threaten to tear apart the delicate social fabric woven so patiently, yet so sensitive and intolerant of neglect. The combination of rising expectations fueled by the information age and rising human insecurity in the name of unfettered markets is not a formula on which a peaceful and prosperous world can ever be built.

Here too, the absence of international regulation or uniformity is exploited to the advantage of employers at the expense of the employed. Global policy coordination can stabilize global labor markets, but it will not address the severe inequalities in wages, which are aggravated by the ease with which jobs now move from one place to another. Some form of global minimum wage, which could be graded according to average national income, would more substantially benefit low income workers with minimal impact on total employment. Its main affect would be to remove the price subsidy which presently benefits more wealthy consumers domestically and abroad.

Policies alone will not be sufficient to meet the global employment challenge. Policies are always based on ideas and values. Current policies are based on the faulty idea that full employment is neither possible nor even desirable and on a system of values that gives greater importance to money than it gives to man. Human capacity is the most precious and remarkable of all Nature's creations. The human resource is the most creative and productive of all resources. Yet we live in a world where the resourcefulness of hundreds of millions languishes for want of employment and the capabilities of a few billion more are grossly underutilized, but not for want of willingness to work. People are a perishable resource. Their capacities grow when engaged, decline when left inactive. Side by side with this unconscionable waste of human resources, society has a vast array of unmet and inadequately met needs – for education, health care, housing, environmental remediation, etc. Efficient market theory is a terrible misnomer. Rationality may have its limits, but this is simply limited rationality.*

Therefore, we need most of all to evolve valid theory of employment based on the premise that the primary purpose of economic systems is to generate human security and promote human welfare, not to maximize growth or preserve accumulated wealth. Such a theory must be founded upon the right to gainful employment as a fundamental human right. For in the market-based economic system now globally prevalent, access to employment is the principal means to obtain access to social freedom and other rights. It is the economic equivalent of the right to vote in democracy. A theory of employment must explain the underlying principles by which global employment increased from 900 million to three billion during the past sixty years.³ Employment being a subset of economics, such a theory must be based on a more fundamental theory of wealth and welfare which does not exist today.⁴ The need for new theory is eloquently expressed by Orio Giarini: “It is nonsense to be in crises with all the progress in knowledge, technology, etc.; we now have far more tools to develop wealth than at the time of Adam Smith!” It is not limits to growth, but the limits imposed by imperfect ideas and narrow, self-centered values that presently limit our growth. The potential for growth is limitless.

The greatest obstacle to global full employment is not population, automation, world trade, multi-national corporations or outsourcing. It is our collective faith in the myth of market fundamentalism and the intrinsic value of money. As Adam Smith so well understood, money is only a symbol for productive capacity and only as valuable as what it can purchase to promote human welfare. “It is not for its own sake that men desire money, but for the sake of what they can purchase with it.”⁵ The real obstacle is our collective refusal to recognize

* Limits to Rationality is a topic of an upcoming World Academy project and of a session at the Academy's 2008 General Assembly at Hyderabad.

the most fundamental of all human values – the value of the human being – and the most essential of all social objectives – the security, welfare and well-being of all members of society.

8. Cooperative Security

The proliferation of nuclear weapons has undermined the security of all nations. The increasing threat of nuclear terrorism or blackmail threatens the security of all human beings. These weapons should never have been created. At least now they can have no possible *raison d'être*. *They are a disease that must be abolished. How long should any reasonable man take to get rid of a disease when he knows the remedy?*

The remedy is simple. It is not to stop Iran from acquiring nukes or to convince North Korea to give up the ones they possess. It is not to persuade Pakistan to stop making more and ensure the security of those they possess. It is for the international community in the name of humanity to declare the production, possession, use or threat of use of these weapons a crime against humanity and to destroy the weapons of mass destruction en masse. And if the UN Security Council will not do it and the General Assembly lacks the power to do it, then it is up to the people of earth – the only conceivable ultimate authority on this or any other issue affecting all human beings – to do it directly. Surely a mechanism can be found to make that possible.

But nuclear weapons are only a sign of the problem, not the problem itself. The real problem is the present paradigm of competitive security in which each nation is responsible for its own security and largely dependent on its own means to secure it. Under this paradigm, each nation is encouraged to acquire the maximum defensive and offensive weapons capability to protect against any possible threat. As a natural consequence, the more successfully one nation enhances its own security, the greater the real or perceived insecurity of other nations and the greater the spur for them to match or excel in preparedness. This competitive paradigm was responsible for the insane escalation of arms production during the Cold War, which still persists today. That is the logic which led to 70,000 nuclear weapons and now sustains \$1.6 trillion in global military expenditure, up by 45% in nominal terms since the end of the Cold War. Weren't we supposed to be safer now?

The only obvious permanent solution is to shift to a cooperative security system open to all nations in which each contributes to and is protected by the overall preparedness of the collective in exchange for renouncing the right to aggression against any other state for any reason.⁶ NATO is a working example, but it remains an exclusive club and a perceived threat to countries which are denied entry. The expansion of NATO may make Europe feel safer, but it will also act as a spur to greater military spending by Russia, China, India, Iran, Pakistan and a host of other states left outside its purview. The only permanent solution is a global cooperative security system, which necessitates an effective system of global governance. We have avoided world war for 65 years, but we have yet to secure the peace. That we can only accomplish all together.

9. Law of the Earth and Human Sovereignty

Nuclear weapons are not the only threat to humanity. As the recent nuclear accident at Fukushima illustrates, environmental catastrophes can be equally or more devastating. It matters little to the hundreds of thousands of people who were driven from their homes, many never to return, whether the event was intentional or accidental. The devastation is still equally great. Fortunately for the rest of the world, Japan is an island. If this accident had occurred in Western Europe, the radiation would have respected no national boundaries. If national sovereignty accords each nation the right to decide on the source of power it will generate for its own use, what does it say about the right of neighboring nations to protection from the threat of nuclear contamination from beyond their borders? While regional security may be achieved by cooperation with other nations, global environmental security can only be achieved by cooperation with all nations. It is not the right of nations that is at stake here but the right of humanity as a whole to the global commons.

Environmental problems are not constrained by political boundaries. Of all the threats confronting humanity today, none so clearly and compellingly necessitates concerted global action as that of the environment. Yet this is precisely the field in which cooperation rarely extends beyond the conference table. International environmental law is rudimentary at best. International courts appear reluctant to address ecological issues that require the formulation of new legal principles embracing a universal concept of sovereignty. The very notion of external sovereignty – that the state is not subject to any higher jurisdiction apart from laws and regulations with which it voluntarily complies – is otiose and counter to principles of justice for all humanity. The emperor wears no clothes.

The emergence of common global environmental threats, such as chemical and radioactive pollution, the exhaustion of non-renewable and water resources, and climate change, compels us to accelerate the evolution of international law. Law is the codified public conscience. It presupposes the existence of a collective. International law presupposes the existence of an international community – a community of people as well as states. Social order does not necessitate law. Primitive societies can be sustained on the basis of arbitrary authority, the rule of force and power. Law becomes essential when the rights of the individual are to be safeguarded from arbitrary action. Law emerges in society with the emergence of the individual. Law is conceived and established only when it has gained legitimacy in the minds of those who are governed and when the collective has acquired the capacity for enforcement. Law represents the power of the impersonal collective over the individual, but also the acceptance by the individual of the impersonal authority of the collective internalized in his own mind. Laws that are not recognized and accepted by the minds of those who are governed have no power. Therefore, laws presuppose the mental development and awakening of the individual. What begins as custom and usage evolves over time into codified law. Customs are based on values. Laws come into existence when the customs are accepted by all members of society. The most fundamental premise of law is that each individual's existence must be in harmony with that of everyone else. The challenge today is for us to embrace shared values with respect to the global commons and the sovereign rights of humanity as a whole.

10. Conscious Evolution

Nature's evolutionary method is clear. Like other species, humanity evolves largely in response to changing external circumstances. In lower species, the choices that generate evolution appear to result from a combination of chance mutation and physical necessity. But clearly there is some subconscious urge in all life forms that distinguishes life from inanimate matter – the urge to survive and adapt for self-perpetuation comes from inside.

Human beings differ from the rest in their capacity to make that adaptation conscious. Humanity confronts problems, challenges, crises and catastrophes, because our knowledge is insufficient and our actions are often detrimental to our own survival and progress. Nature confronts us with our limitations so that we can consciously evolve more adaptive and creative responses to enhance the welfare of the collective and the well-being of its individual members. Through experience we acquire the physical knowledge and skills needed to adapt better. Over time that experience matures into a vital sense of history which imparts the understanding and attitudes needed to associate with other people and organize our collective activities more effectively. The rules, laws, customs and institutions of civilization emerge from that historical experience. Spiritual values nurtured as culture are the alchemist's precipitate – the sacred essence of that cumulative experience – distilled, enshrined and passed on as the most precious gift from generation to generation. Knowledge, skill, attitudes, organization, customs, laws and institutions must necessarily evolve with changing times and conditions. But spiritual values are universal and eternal. They are our most precious legacy and valuable guide to the future.

The past few centuries of human evolution have been accomplished by a near universal acceptance of one of these eternal truths – the value of freedom. Freedom is the cultural foundation on which the entire edifice of modern civilization is based. An eternal truth, no doubt; yet like all eternal truths, it can be fulfilled only when it expands to embrace and accommodate complementary truths as well. For narrowly pursued as a sectarian dogma, freedom degenerates into self-destructive license as quickly as the value of equality, separately pursued, degenerated into self-destructive authoritarianism in the 20th century. Freedom separately pursued is the law of the jungle that in the name of a high ideal destroys the freedom of others. And if there is one thing which Nature is trying to teach us through the problems, challenges and crises which currently confront humanity, it is the need to reconcile the greatest freedom for each individual with the greatest welfare and well-being for all. Individual freedom can only be attained and preserved for all by founding it on the unity of the collective, on the value of human unity.

11. Individual and Collective

Historically, the relationship between the individual and the collective has been a stormy love affair, a strange mixture of adulation and intolerance, creative inspiration and blind conformity. Nature's apparent method has been to sacrifice the individual member for the survival of the species. That is the obvious rule in the animal kingdom and in the earlier stages of human evolution as well. Historically, society has been a strict and intolerant

parent. It welcomes new members into its fold and finds room for them, provided they strictly adhere to its beliefs, rules, customs, values and ways of life. Tolerance for dissent – political, religious, social and even intellectual – has rarely been given more than lip-service. In this sense, human evolution conforms to the universal pattern in physical nature.

Yet, ironically, we find that all human social progress can be traced back to the willingness of the collective to follow the lead of a pioneering individual who refuses to conform. The role of the individual is similar to that of the aberrant gene in biology, introducing a new or varied capacity which sometimes proves to be of such immense value to the collective that it is quickly imitated by others, assimilated by the group, consciously multiplied by organization, institutionalized through education and subconsciously passed on to future generations in their cultural genetic code.

Society is the psychological gene pool that preserves capacities acquired by past generations; some that are of greatest value for its survival and development, others that are anachronistic or antagonistic to its persistence and progress. The individual is the point of departure from the past and present into the future. Drawing upon the inheritance of the collective, the individual has the capacity to consciously recombine its elements for greater effectiveness and even to fashion new elements out of the collective knowledge and experience. The adventurer, pioneer, entrepreneur, social innovator, revolutionary leader, inventor, original thinker, genius and saint are fine flowers of individuality. They catalyze the development and evolution of the collective by their visions, ideals, beliefs, ideas, passions, original and courageous actions. The uniqueness of the individual is the complement of the unity of the collective.

Although society has always been intolerant of dissent, throughout history it has looked to the individual for its salvation in times of crisis. Thus, the American Revolution gave birth to Washington and Jefferson, the French Revolution to Napoleon, the Panic of 1907 to Morgan, the Great Depression to Roosevelt, the Second World War to Churchill, Indian freedom to Gandhi, and the Cold War to Gorbachev. In times of rare opportunity, it is always the unique individual that leads the way. Thus, the Renaissance gave birth to Leonardo and Michelangelo, the Enlightenment to Newton and Descartes, the Industrial Revolution to the Rockefellers and Carnegies, the electrical age to Edison, the automobile age to Ford, the Scientific Revolution to Darwin and Einstein, and the PC Revolution to Steve Jobs and Bill Gates.

12. Shifting Balance

In recent centuries the balance of power between the individual and the collective has been shifting. Though an equilibrium still persists, the scales are no longer weighted so heavily in favor of the collective. The reason is evident. Human evolution is an evolution of consciousness. The collective in Nature is subconscious, living by instinct and genetic programming rather than by conscious volition. Human collectives begin the same way, governed mostly by fixed biological needs, physical habits, vital desire and fears overlaid with inherited social traditions that are difficult to change, and topped by a thin layer of mentally conscious understanding driven by the curiosity to know and the urge to explore and innovate.

But over time the relative balance in this equation changes. The conscious part becomes larger and more influential, more and more subjecting the animal instincts and inherited habits to analysis and conscious control. As it progresses, society becomes more adaptive, inventive, creative and capable of development. The individual is the key to this process, the conscious peak and instrument through which the collective experiments with new thoughts, attitudes and actions.

Over millennia, civilizations have discovered that the greater the freedom they accord within limits to their creative individual members, the greater the capacities society acquires for survival, growth, development and evolution. Once realized, society strives to consciously foster at least a modicum of individuality by greater political freedom, rule of law, human rights, economic opportunity, social equality and education.

The past few centuries of Western civilization have led the way in pushing the equilibrium further in the direction of the individual. While the ideal of individuality was born in Europe, the dead weight of social stratification and tradition prevented it from flowering there. Thus, Europe cast its ragged social rebels across the Atlantic, where they could sprout as individuals in the fertile soil of an empty continent. Today America is globally emulated, even where it is not admired, out of recognition that no other society has ever succeeded so far in creating a collective environment for individual development and self-expression. On an evolutionary scale, the results are modest at best. America has become a symbol of pioneering individual initiative, self-reliance, innovation and inventiveness. Social mobility is unimpeded, though social conformity remains the rule. Speech is unencumbered, but thinking at variance with the conventional wisdom is still frowned upon and met with intolerance or derision. The physical individual is born. The social individual is emerging from the womb. The mental individual is still the rare exception.

13. Organizing Individuality

Individual initiative is the catalyst for social innovation. Organization is the mechanism by which nascent inspirations are supported, assimilated and propagated until they become competencies of the collective. From earliest times, human communities have been characterized by a unique capacity for conscious organization. Its most notable expressions include the organization of sounds and concepts (language), productive processes (agriculture and manufacturing), defensive and offensive capabilities (military), mutually beneficial exchange (trade and markets), political and commercial population centers (cities), symbolic media to facilitate accounting and exchange (money), and institutions to optimize the use of resources (banking).

Organizations have traditionally played a conservative rather than a revolutionary or evolutionary role as centers of power and authority (monarchy, parliament and the church). Essentially intended to propagate and preserve what society has already accepted and accomplished, they have rarely led the way, except perhaps at the formative stage of their founding, as the Royal Society did during the time of Bacon and Newton. But even the most revolutionary of organizations, such as the Bolshevik Party in revolutionary Russia, quickly become conservative forces once they are integrated into the social fabric.

That may be changing. For as individuals become more conscious and societies more tolerant and supportive of individuality, the organizations they fashion become more conscious as well. Conscious organizations are conscious centers of conscious individuals. Through them society itself becomes more conscious. This emergent consciousness of the social collective is dramatically illustrated by the phenomenal technological inventiveness of the computer age and the social innovations of the Internet. Individuality has finally managed to evolve a field and platform on which it can compete on almost equal terms with the collective. Google is the epitome of an organization that seems to have acquired the creative characteristics once seen only in remarkable individuals. They and countless other creative individuals and organizations have now given birth to the Internet, the first truly global social organization, a conscious center through which humanity as a whole can become conscious and act self-consciously.

This evolutionary development opens up unparalleled opportunities. No longer are crises the essential and inevitable means for our progress. The conscious individual and the conscious organization have the potential for recognizing, accepting and altering social functioning before it precipitates as crisis, and even for converting looming crisis into unprecedented opportunity. Today even an idea can play the role that a courageous leader played in the past. As Club of Rome awakened the world to the consequences of unbridled growth based on scarce natural resources, as Pugwash and the International Physicians for the Prevention of Nuclear War compelled the World Court to question the inherent legality of nuclear weapons, an organization – better still, an umbrella group or confederation of organizations – inspired by the right idea and the right values can awaken and mobilize international public opinion in a manner inconceivable in the past.

Today humanity is at a crossroads, a critical transition point, where it has to renounce the outdated conceptual framework of the past half century, as 60 years ago it renounced the archaic concepts of competitive nationalism that had led to two world wars in forty years. The world view based on the sanctity of national sovereignty, a useful concept in the battle against colonialism and empire, has now become the principal barrier to human progress. To expect nation states – especially those who hold the reins of power – to unilaterally renounce an acquired temporary advantage which they regard as a natural right and to cede power on their own is no more realistic than to have expected monarchy and aristocracy in the past to voluntarily forego the powers and privileges inherited from their ancestors. Nor is it likely that states will consent to substantially alter the structure of unrepresentative international organizations they presently dominate. Power does not renounce itself. Power relents only to greater power. Where power of governance exercises authority independent of the will of those who are governed, there is need to appeal to a higher authority and to evolve new structures at a higher level.

And there is a higher power in the world today waiting to be summoned, a power more sanctified than the rights and authority of the nation state. It is the power of humanity as a whole. Throughout history, humanity has been a voiceless, powerless witness to the actions of its constituent parts. This is no longer the case. Today humanity has acquired the conscious self-awareness and the organizational capacity for self-expression and coordinated action.

Organizing the consciousness of the global power of citizenry is the natural step to transcend the nation state. It needs only the right pioneering leadership with the right ideas and the right values to sound the call.

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In Search of Failure's Silver Lining

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Technology offers a number of examples of serendipity, of random discovery, of experiments going off the rails – though we highlight mostly the ones where the offshoots were spectacular.

Aspartame was discovered – or involuntarily invented – in 1965 by James M Schlatter, a chemist working to produce an anti-ulcer drug. Schlatter just happened to experience a sweet taste when, wetting his finger to turn a page in his notebook he licked the finger contaminated with aspartame. Importantly, he had the presence of mind to trace the sweetness back to a simple molecule of two amino acids.

Teflon, discovered by Roy J Plunkett at DuPont Company's laboratory in 1938, was another accidental invention – unlike most other polymer products. But as Plunkett often told later, his mind was prepared by education and training to recognize novelty.

Plunkett's assignment was researching new chlorofluorocarbon refrigerants (we know them as Freons) which were seen as great advances over earlier refrigerants like sulfur dioxide and ammonia. Plunkett had produced some 100 pounds of tetrafluoroethylene gas (TFE) and stored it in small cylinders at dry-ice temperatures in preparation for chlorination. When he and his assistant made a cylinder ready for use, no gas came out, yet the cylinder weighed the same as before. They opened it and found a white powder, which Plunkett was clever enough to characterize for properties other than refrigeration potential. He found the substance to be heat resistant and chemically inert, and to display very low surface friction so that most other substances would not adhere to it. Plunkett realized that, against the predictions of polymer science of the day, TFE had polymerized to produce this substance – later named Teflon – with potentially useful characteristics. Other experts investigated the substance further.

At first Teflon seemed too expensive to produce to ever find a market. Its first use was found in the gaseous diffusion process of the Manhattan Project, resisting corrosion by for example fluorine (it may also be used for containing a number of very aggressive acids). Teflon covered pots and pans were invented years later.

Teflon is inert to virtually all chemicals and considered the most slippery material existing. These properties have made it one of the most valuable and versatile technologies ever invented, contributing to significant advancements in areas such as aerospace, communications, electronics, industrial processes, and architecture, and also as a soil and stain repellent for fabrics and textile products.

Kanthal is the trademark for a family of iron-chromium-aluminum alloys used in a wide range of resistance and high-temperature applications. The first such alloy was developed haphazardly by Hans von Kantzow in Hallstahammar in Sweden. The accidental material could withstand high temperatures while offering intermediate electric resistance. First von Kantzow had no time to explore the novelty further; only several years later did he develop a business around its use for various types of heating elements (in space applications, saunas and other ovens, bread toasters, hair dryers, soldering irons, and what not).

Saeid Esmailzadeh, at the Stockholm University, was doing what he regarded as a routine experiment in a hot oven. That oven suddenly crashed and its cooling water poured out over the material he had placed in a crucible. This equated with very fast cooling: an obviously failed experiment, Esmailzadeh concluded. Only it was no failure, because instead of the intended regular crystals, out of the oven came glassy lumps of a new material never before produced, a super-material, extremely hard and with, among other qualities, a refraction index almost impossibly high. Currently it is the hardness of the material that is exploited for bearings as well as in armor.

At 3M, known as keen on innovation, seasoned chemist (with more than 20 patents to his name) Spencer Silver developed a glue that turned out not to hold. He suggested several applications but none took off; he also told of his invention at several internal seminars, one attended by Art Fry, choral singer in his spare time. Well, you know the rest: Fry took Silver's paper with bad glue to serve as bookmarks in his hymnal, and the Post-It® was born. In effect, Spencer Silver had often told of his 'failure' so that others could learn from it, build on it.

Esmailzadeh's oven accident, Silver's failed glue: who would be searching for failure? Failures just happen, though we always hope to avoid them. A vile phenomenon, a vile word, no?

I would suggest searching for a more appropriate word for failure, one not tainted with negative connotations. Because failure is the high road to innovation, because failure is the inevitable investment in the future, because failure is – the road to success. Remember Edison retorting when pitied for having failed at 10,000 attempts (or some such number) to get the right filament in his light bulb: “no, no 10,000 failures but learning, identifying 10,000 ways that won't work”.

Concepts such as learning, tests, trials, and experimentation offer alternate, more positive angles. As kids we experiment constantly, with language, with acquiring skills such as biking and swimming, maturing, going through a process of socialization. Learning to ride a bike is worth some bloody knees; corrected grammatical errors are just that, not failures. Yes, we talk about learning and maturing, not about failing. To the contrary, we are succeeding!

You may not publish a report on a failed scientific experiment, yet in science such experiments constitute part and parcel of its very process; Richard Feynman once argued that a publication on a failure might be as valuable, or even more so, than one on success – but fat chance that it would be published (or be regarded as a merit). One established way of testing and verifying theories is by going to the extremes, to try to find out what the limits of an established law or connection or interdependence are, where it fails. Or just measuring. Michelson-Morley failed at establishing the speed of light in different directions versus the

supposed ever-present ether of their era's physical world. If a theory tested to its extremes fails, we know where it no longer holds. Such failure might signal the paradigm shifts heralded by Kuhn, or the emergence of new thought collectives around new thought styles after Fleck.

In some famous instances, such failure has generated fundamental breakthroughs. Henri Poincaré attempted to solve the three-body-problem thus winning a prize established by the King of Sweden and Norway. And indeed he won the Prize – by showing that there were no solutions to that problem. Thus, as a kind of by-product, he laid the foundation for chaos mathematics, which would start to flourish in earnest only sixty years later. Likewise, when Hilbert had established his famous list of mathematical problems, his second was the demand for proof that arithmetic was consistent, free of any internal contradictions. Gödel's work on that problem turned out to be a failure in the sense that he proved, very elegantly, that the statement is, in effect, false. It was a productive failure, like Einstein's obstinate refutation of the 'spooky interaction at a distance' that followed from quantum mechanics, and a spooky interaction that constitutes the basis for ideas about quantum computers with high degrees of security and enormous computing power.

Talking mathematics, there is a branch of topology that is dedicated to failure of sorts, René Thom's catastrophe math. There is a limited number of fundamental catastrophes, and in essence, here we learn that the trajectory, the order in which a development unfolds, is decisive for whether there will be a smooth journey, or a discontinuity, a dramatic drop (or hike) along the way, that is, a catastrophe. Another approach to mathematics, systems dynamics, also underlines the importance of the dynamics, that is the delays and the accumulation of what is handled internally in a system, making the behavior of the system profoundly counterintuitive. Then there are the paradoxes or incompatibilities between human action and the idea of rational behavior, conflicts mapped not least by Tversky and Kahneman.

The title "In search of..." intends to evoke the title of the business bestseller "In search of excellence". I heard its (co-)author Tom Peters explain what secret they had found behind the fact that some oil drilling companies were by far more successful than others – very simple: "they drill more holes"! The more failures the larger the number of successes. Losers become winners.

This drilling of more holes applies at several levels. Sir James Dyson is best known for inventing the Dual Cyclone bagless vacuum cleaner, an idea saving him from bankruptcy and the first building block in what would become a billion-dollar business. In an article in *Wired* magazine, he pleaded for failure:

"An inventor's path is chorused with groans, riddled with fist-banging and punctuated by head scratches. Stumbling upon the next great invention in an "ah-ha!" moment is a myth. It is only by learning from mistakes that progress is made. *It's time to redefine the meaning of the word "failure" (emphasis added)*. On the road to invention, failures are just problems that have yet to be solved.

It started, Dyson continues, with a vacuum. When his bagged vacuum lost suction, he came up with the solution – cyclone technology. But having an idea was just the beginning. With a few rudimentary materials he mocked up a first prototype. Crude, but it worked (sort

of). From cardboard and duct tape to ABS polycarbonate, it took 5,127 prototypes and 15 years to get it right. And, even then there was more work to be done.

By the time Dyson made his 15th prototype, his third child was born. By 2,627, he and his wife were really counting their pennies. By 3,727, his wife was giving art lessons for some extra cash. These were tough times, but each failure brought him closer to solving the problem. It wasn't the final prototype that made the struggle worth it. The process bore the fruit. He just kept at it.

When it comes to failure, Dyson claims to be trumped by Edison who famously said, "I have not failed. I've just found 10,000 ways that won't work." Those 10,000 detours resulted in the Dictaphone, mimeograph, stock ticker, storage battery, carbon transmitter, and the joint invention of the light bulb. In the end, 10,000 flops fade into insignificance alongside Edison's 1093 patents.

On the next, more aggregate level, corporate growth correlates with preferences for experimentation. In a Babson Executive Education analysis of 635 global companies, of those within the bracket of "least growth" (1-10%), just under a third preferred experimentation to other methodologies such as statistical analysis to identify revenue and operational improvement opportunities. Almost half (46%) of the companies with 11-20% growth preferred experiments, while well over half (56%) of the companies with more than 20% growth did opt for that approach.

No wonder more and more executives are championing experimentation over (or as precursor to) time-honored analytic approaches like strategic planning and market research. Many also struggle to democratize experimentation.

The rationale for such 'democratization' involving large swathes of organization is clear, since R&D labs have numerous natural constraints that can limit the true potential of experimentation. R&D personnel are often detached from the day-to-day running of the business and hence not always the best to experiment on topical problems. In addition, such labs are often physically separate from the operational centers of the business, so transmitting ideas from the lab to where they are needed constitutes a classic problem. And the number of R&D personnel is usually small compared to the number of all personnel. No matter how brilliant your R&D lab personnel, if you don't democratize experimentation you lose the knowledge and skill of 85-90% of your organization's employees who do not work in the lab. A radical way of outsourcing risk taking and thus benefitting from failure is through open innovation, that is, relying upon a multitude of external sources of ideas and experimentation.

On an even more aggregate level, and in principle, failure is in a sense a consequence of success: no innovations, no business models live for ever – there is always Schumpeter's gale of creative destruction. The best we can hope for, no, the very best we must put our trust in is the existence of provisional truths, provisional, ephemeral successes to be enjoyed as long as they last. It is not that technology moves on though it does, but all of society and markets change as the result of an intricate interplay between new ways of organizing, new conventions, tastes, demographics. Novelty and disruption are the order of the day, not the economists' fake equilibrium. All winners eventually become losers, so please, just move on. Cultures and systems that do not overly punish failure will generate more people willing to undertake risky experiments. As economist Nathan Rosenberg has noted, one of the hall-

marks of capitalism is its tolerance of failure in a way the Soviet command economy did not display. Alongside this there is a diversity in organizational forms allowing for experimenting.

There is even statistical evidence that economies with more churn in the corporate sector display faster economic growth. The relationship actually seems causal: turnover today correlates with fast economic growth tomorrow. The real benefit of this creative destruction is not the appearance of “rising stars” but the disappearance of old, inefficient companies. Failure is not only common and unpredictable, it’s healthy. On a corporate level, this corresponds to 3M’s (and others’) rule that x per cent of any business unit’s revenue must come from products younger than y years, creating a need for new products as well as for pruning the existing product line.

Like the scientists Feynman reportedly worried about who saw no merit in failure, though that might have been worth reporting. Innovation – particularly radical innovation – does not happen enough and we should soften the failure consequences for individual researchers so that more risky experiments would take place. India’s Tata Group is an enormously diversified company from tea over cars to steel. As the company seeks to grow beyond its roots in India and compete globally, innovation is becoming central. To that end, Chairman Ratan Tata has instituted a surprising competition: *A prize for the best failed idea!* To spark innovation and keep the company from avoiding risks, the prize is intended to communicate how important trying and failing can be. “Failure is a Gold Mine!” proclaims the Chairman who is near-retirement.

So: fail often, fail quickly, fail inexpensively. Tell, disseminate failed results overtly, like Spencer Silver did. Do not cover them up or try to forget them. Attempt to learn all the lessons embedded. Reward failure like Tata, or reward “risks that were worth taking even though they did not pan out”. Look upon failed results as weighty trade secrets. Interestingly, when the Harvard Business Review dedicated an entire issue (April, 2011) to failure, numerous articles ended in a discussion of ethics.

Design for failure: design strategies for generating complementary failures that together make for success. Think about metrics, about failure inventories and audits, always with a view to profit from the learning experiences. Map out a failure strategy.

Find and design precise ways to fail often and with low costs. Re-use materials and what otherwise would be waste. Rely upon scenarios and stories, and not least upon sketching. Make rough, speedy models, mockups, and prototypes using whatever proxies are easily and cheaply available. What more? How to map the best set of failures to set out to make, to have the aggregate results contribute positively in the end? What about experiencing failure as part and parcel of an individual’s development, of an organization’s establishment of a joint culture and sense of mission and cohesion?

Perhaps we need new words, a typology and a taxonomy, also in the sense that we need to classify and in a way monitor and measure failure, as Tata’s prize may indicate. Ericsson’s AXE system is the world’s all-time best-selling telephone switching system. It resulted out of not just one but two different failed attempts to design a digital system to substitute the preceding electromechanical systems. The investment, the costs sunk into those failed systems made it alluring to carry on to improve and adjust those, to salvage them.

Resisting this temptation was difficult but the argument for starting from scratch eventually won because the failures were so resounding. In a way, it was a question of ‘failure quality’. It would seem better to fail gracefully, but not necessarily here.

If Ericsson’s management had fallen for that temptation and invested more efforts into their failed but somewhat functioning AXE predecessor, for which there were customers and installations to be serviced, they might have experienced a surviving failure. This class of failure often represents those sunk costs that one hopes to retrieve, possibly political promises and investments in PR: the Concorde supersonic airplane has been seen as an example.

There are also failure fallacies. One is the mythical man-month. Typically, in a project (particularly for developing computer software), staffing is decided through the calculating of man-months necessary for the task. When it turns out that there is a deficit, that is, the project is running late, the default remedy is most often seen as getting more people, so more man-months, engaged. Problem: this is a recipe for further delay because various communications demands increase man-month consumption, front-loaded in the sense that the first thing that happens is that much more time is lost initially, introducing the newcomers, getting them up to speed.

How could success be failure? Two artists who came to the same conclusion were Lucien Freud and Harold Cohen. Freud felt that he had become his own copier, creating one more Freud, and he was successful at it, selling well, enthusing the critics. Much the same for Cohen, which led him to experiment with computer art and become a pioneer in that field, while Freud changed his style drastically, offending some of his supporters and no longer meeting customer demand. They had defined it a failure of becoming one’s own epigone, a failure begetting radical renewal and reinvention.

Having concluded “les Demoiselles d’Avignon”, Picasso (who did not name the painting himself) turned it to the wall, avoided displaying or showing it. Established critic and Picasso expert John Berger terms it a failure; intelligence expert John Gardner hails it as a defining work for the 20th century.

These examples point to the difficulty of defining the very term failure. In some instances, the market may tell, but perhaps only in retrospect. In the 19th century, composer Johann Sebastian Bach was not regarded as a great composer, in contrast with later. There is an explanation in a model of creativity that sees this as depending, first, on the particular work, Bach’s, Cohen’s, Freud’s, or Picasso’s, then on the specific domain, music or painting, and then also the field, those experts and critics and peers who decide what is good music and what may be published in a physics journal. A new paradigm or a new style of thought comes associated with a new collective: the field. So failure depends on these three dimensions, but may also signal or initiate some sort of seismic shift.

Jazz and improvisational jazz is a long way from Bach. Improvisation is in a way about making failure productive. There are many famous solos or improvised cadences that have been triggered by someone in the band striking a false note, inspiring someone gifted enough to spin it out, to salvage the moment, by generating an entrancing novel melody.

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NEWS & DOCUMENTS

Report on Activities of WAAS and Club of Rome

September 2011

Members of the Academy and Club of Rome met in Dubrovnik, Croatia on September 26-27, 2011 to participate in the Dubrovnik Sustainable Development Conference and to launch the WAAS project, “From Crises to Prosperity”, which will examine the root and common causes of four international crises related to global governance – financial stability, unemployment, climate change and nuclear proliferation. The project seeks to generate support for a quantum shift in values and global governance structures. Ivo Šlaus is the project leader.

October 2011

On October 7th WAAS will launch a month long referendum of Fellows to decide on the features of a new democratic governance structure for the Academy adapted to the needs of its increasingly global membership and to 21st century communication technologies.

On October 17-18th, Club of Rome will conduct an International Conference at Basel on “The Future of Energy and the Interconnected Challenges of the 21st Century”. Energy abundance and easy access to non-renewable resources have brought unprecedented prosperity and technical advancement to humanity. However, exhaustible resources will need to be replaced in the near future. Climate change adds a new imperative: the search for a new generation of energy delivered that is carbon free. New forms of energy will be required including renewable energy. New energy strategies may offer the opportunity to re-shape economic thinking and facilitate a new kind of economic growth that is both environmentally sound and creates employment.

November 2011

Ties between the Club of Rome and WAAS date back for decades since many of our interests are strongly convergent and so many Club members have been Fellows of WAAS, including several presidents. On November 9-10 our two organizations will take a big step in fostering closer collaboration when the Club conducts its Annual Conference and the Academy conducts its General Assembly at the same time and venue in New Delhi. The theme of the event, which is being hosted by the newly established Indian Chapter of the Club is “Economics, Ecology and Values: Where the World and India Meet”. It will include special sessions on new economics, sustainable employment, food security, values for a sustainable future, young leadership and unleashing economic potential. On November 11th, WAAS will launch the next phase of its projects on “Revolution in Human Affairs” and “From Crises to Prosperity” and also conduct a plenum to discuss the Academy’s program framework and future programs.

December 2011

From mid-November through the end of the year, the Academy will conduct direct election of new officers – the first time in decades that Fellows have had the opportunity to directly elect WAAS’ entire leadership team.

Program Framework for the World Academy of Art & Science

By WAAS Strategic Planning Committee*

This document forms part of the second report of the WAAS Strategic Planning Committee presented to the Board of Trustees in May 2010 but never circulated to our Fellows. We publish it now inviting readers from both within and outside the Academy to contribute their ideas on the type of knowledge the world really needs today to effectively address the pressing problems and unprecedented opportunities unfolding. Comments can be sent to spc@worldacademy.org.

At the time the World Academy of Art & Science was founded, there were very few international non-governmental organizations devoted to the free exchange of ideas and none so encompassing in its breadth as WAAS. The very conception of the Academy constituted an original idea and a pioneering initiative. In the present age of globalization, networking and the World Wide Web, this is no longer true. The unique composition of the Academy's membership is no longer sufficient justification for the Academy's existence. During the early phase of the strategic planning process, WAAS Fellows were unanimous in describing and conceiving of this as a value-driven organization that makes a significant and concrete contribution to addressing the pressing problems of the world today. A broad umbrella for diverse interdisciplinary dialogues may form one part of the Academy's program, but our unique composition needs to be leveraged to generate original perspectives that transcend current knowledge and contribute meaningfully to addressing real social issues. Generating and projecting original insights, ideas, perspectives or solutions to the opportunities and challenges of the 21st century is a tall order, but it is the only meaningful way for us to play the significant role in world affairs envisioned by our founders.

With these objectives in mind, the SPC sought to develop a Program Framework that would be sufficiently focused to address the most pressing contemporary social issues while at the same time sufficiently broad to encompass the full spectrum of the arts, humanities and science. It became evident that in order to generate original and unique ideas, the framework would need to start by recognizing the limitations in current approaches to knowledge and formulating its own conception of the type of knowledge the world needs. Based on the Foresight model suggested by Fellow Ruben Nelson, we began by examining our conception of what we mean by reliable knowledge. We then proceeded to identify a set of perspectives based on this conception which can be applied to evolve original insights and ideas relating to a wide range of issues.

1. Characteristics of Reliable Knowing

The reliability of our knowledge determines our ability to properly understand problems and formulate effective solutions. Therefore, it is essential that the Academy's strategic plan and program framework incorporate criteria for reliable knowing. This section identifies fun-

*Garry Jacobs, Winston Nagan, Ruben Nelson and Ivo Šlaus

damental characteristics of reliable knowing which can be applied to the identification, comprehension, and effective response to social and policy issues.

Figure 1 : Characteristics of Reliable Knowing



Human-centered Knowledge: Reliable knowing related to social consequences and policy implications must place pre-eminent value on the welfare and well-being of human beings, individually and collectively, and the sustainable development of human society.

- a. *Evolutionary Perspective:* Reliable knowing should recognize that human institutions exist in an ever-changing, ever-evolving social context, so that tomorrow's knowledge may no longer be limited by outdated values, ideals and social realities.
- b. *Value-based or Ethical Perspective:* Knowledge of human systems must be judged by the values it seeks to fulfill, for the laws and processes governing society and human behavior are created by human beings for human welfare.
- c. *Total & Integral:* Reliable knowing is interrelated and inseparable based on an integral knowledge of society and humanity that transcends and unifies partial perspectives. It encompasses and integrates the perspectives of the sciences, arts, and humanities.
- d. *Responsibility & Accountability:* Reliable knowing with respect to human systems is based on an explicit or implicit understanding that human beings are fully empowered, responsible and capable of resolving the problems they create.
- e. *Reunites the Objective & Subjective:* In the study of humanity and society, there is no objective truth independent of the subjective perceptions and attitudes of those who examine it. Reliable knowledge identifies the subjective points at which our attitudes and

behavior must change to effectively address a problem that manifests objectively in the world around us.

- f. *Constructive & Creative*: Reliable knowledge is based on the creative imagination to perceive the opportunities as well as the challenges, the solutions as well as the problems.
- g. *Powerful & Effective*: Reliable knowledge contains within itself effective power for action. Reliable knowledge is complete knowledge which addresses problems without giving rise to new problems or generating unintended negative side effects.

2. Perspectives on the Emerging Global Context

The principles of reliable knowing can help us formulate a set of perspectives for approaching global issues. Based on the criteria for reliable knowing, we have identified seven perspectives which can be applied to arrive at reliable knowledge pertaining to global challenges and opportunities. These perspectives are intended to serve as conceptual guidelines for the definition and resolution of issues.

- a. *Human Welfare & Well-being*: A human-centered, value-based perspective on the human context is one which is centered on meeting the needs of all human beings in the most equitable and effective manner. Each aspect of the global context should be evaluated in terms of how effectively it meets fundamental human needs and the highest human values.

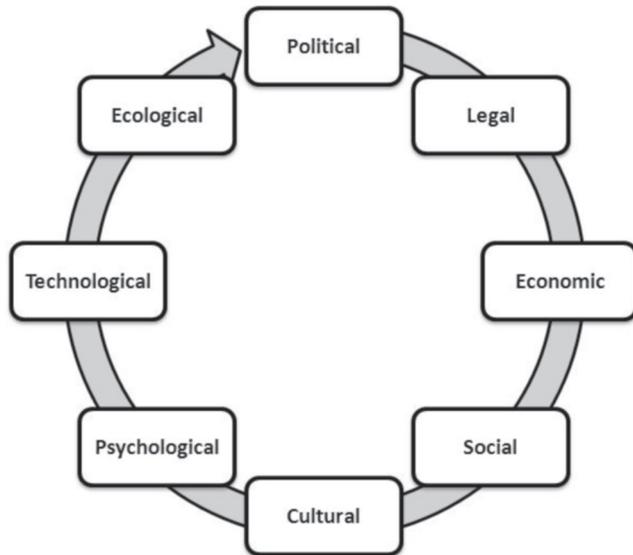
Figure 2: Human-centered Knowledge



- b. *Comprehensive Perspective & Solutions*: There is an inextricable relationship between political, legal, economic, social, cultural, organizational, psychological and ecological factors. Reliable knowing calls for a comprehensive, total and integral perspective that

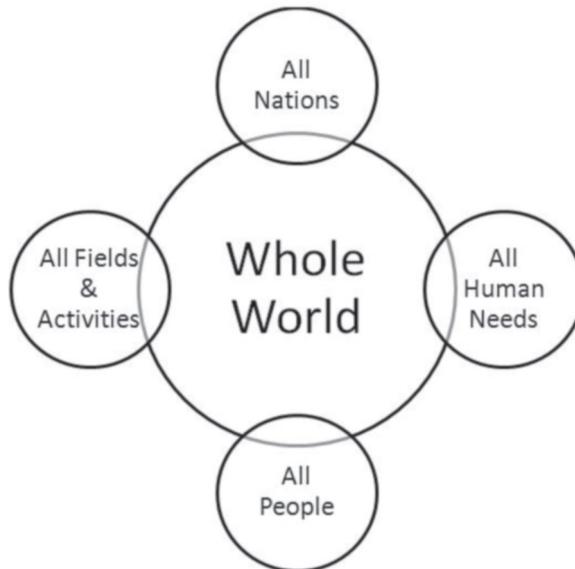
reflects the relationship between the part and the whole and identifies solutions that will deliver the greatest overall benefit to the whole of humanity.

Figure 3: Comprehensive Perspective & Solutions



- c. *Whole World Perspective*: All people, nations, and fields of activity constitute a single integral whole that is in a process of continuous evolution and whose parts are continuously interacting with one another to create new opportunities and challenges.

Figure 4: Whole World Perspective



- d. *Evolutionary Perspective*: Reliable knowledge has to view past, present and future as various points on an ever evolving continuum. Past theory and precedent are an insufficient qualification for future practice.
- e. *Opportunity-based Perspective*: Reliable knowing should lead to the creation and identification of new opportunities, not merely a preoccupation with solving problems and meeting anticipated challenges.
- f. *Effective Knowledge*: In the measure knowledge is reliable, it generates real power to solve problems and tap opportunities without unexpected and undesirable consequences associated with partial knowledge. Knowledge is effective when it is comprehensive and when it takes into account both the objective and subjective dimensions.

3. Program Framework

The primary objective of the Academy’s founders was to promote human welfare through the application of knowledge that is global, objective, scientific and imbued with the highest ethical standards and sense of responsibility. The Manifesto they drafted “Science and the Future of Mankind” identifies the enemies of peace that need to be conquered as hunger, sickness, waste and destruction, intolerance, ignorance, resignation and fear.

As we enter the 21st century, it is evident that the problems of security, economy and ecology facing humanity now cannot be effectively addressed at the national level. Global governance and sustainable development, broadly defined, encompass the major fields through which the application of reliable knowledge is needed to promote human welfare.

Figure 5: Program Framework



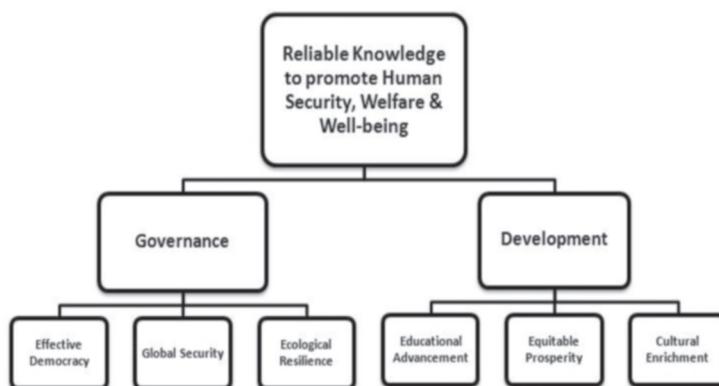
- a. Global governance includes issues such as the elimination of war, abolition of nuclear and other weapons of mass destruction, global financial management, ecological security, rule of law, democratization at the national and international level, etc.
- b. Sustainable development includes issues related to life styles and living standards, employment, health, education, and culture. In fact, most issues of global significance today span both categories to some extent. For example, employment security and financial stability can no longer be adequately addressed without international cooperation.

The Program Framework is an inclusive approach intended to provide focus and perspective, not to limit or exclude any important issue or field of knowledge. The approach is issue-based rather than based on the traditional division of disciplines. It is a means of conceptualizing issues of global significance in a manner that ensures a human-centered perspective and recognizes the central importance of applying a comprehensive integral knowledge. The program framework is depicted in figure 5.

4. WAAS Program Thrust Areas

- a. The broad conceptualization presented in the Program Framework lends itself for application to a very wide range of issues. Based on ideas and proposals from Fellows generated during the planning process, the Program Framework can be further defined in terms of major thrust areas. The delineation of thrust areas is intended to create a focused agenda, but it is sufficiently inclusive to encompass a very wide range of issues such as global security, global financial management, economics of human welfare, democratic global governance, human security, education, science, research, sustainable development, national sovereignty, global development, environmental degradation, global interconnectedness, the internet, freedom, rising expectations, money, law and governance, health and health care, as well as other evolutionary trends.

Figure 6 WAAS Program Thrust Areas



- b. The relationship between the program framework and major thrust areas is depicted in figure 6.
- c. *Arts & Humanities*: Special reference is necessary with regard to the arts and humanities. Although both are encompassed under the educational and cultural thrust areas, some may consider that they deserve separate consideration. Reflecting on the intentions of the Academy's founders, we conclude that their primary purpose was to address pressing social issues. Their rationale for bringing together the Arts & Sciences was to demonstrate the relevance of all intellectual viewpoints to forge an integral perspective on these issues, rather than to promote any particular field of knowledge. Therefore, the program framework and thrust areas are focused on issues rather than subjects.

5. Real-Ideas to Change the World

a. Issues-based Approach

- (1) The Program Framework provides guidelines regarding the type of knowledge and the types of issues that the Academy should seek to address. It does not identify any specific issues on which WAAS can make a significant original contribution to global human development.
- (2) The identification of a specific message to project – one or more positions the organization stands for -- has been one of the factors distinguishing organizations such as Club of Rome and Pugwash, whose programs have had visible, global impact.
- (3) The decision of the Board in 2007 to adopt the Abolition of Nuclear Weapons as a specific objective of the Academy marked a significant step in identifying WAAS as an organization that stands for idealistic positions on issues of paramount concern to our founders. This decision activated the participation of some Fellows and generated a series of events, and a collaboration with Global Security Institute, Middle Powers Initiative and Jasjit Singh's work on nuclear disarmament. The limitation we have faced on this issue, has been our inability to define a unique position or contribution that we could make to distinguish the Academy from Pugwash, IPPNW, Global Security Institute and countless other organizations dedicated to a similar goal.

b. Real Ideas Framework

- (1) As a complement to the Program Framework described above, the SPC recommends that the Academy also adopt an approach designed to identify specific issues on which WAAS can make a significant, original contribution.
- (2) *Real Ideas can be defined as ideas with self-effectuating power. The acceptance of the idea carries with it the capacity to change our perceptions, attitudes and actions.*
- (3) *From Problems to Solutions*: The program framework identifies global issues of importance. The emphasis is on a problem that needs to be recognized and addressed.

Here the focus is on advocacy of original ideas, bold strategies and essential actions that are needed to resolve challenges and tap opportunities. We do not just discuss an issue. We take a position on what should be done to address it.

- (4) Over the next two years, the Academy should seek to identify 3-5 Real-Ideas that can change the world, ideas akin in their originality, scope and broad appeal to the Club of Rome's conception of "limits to growth." Whatever controversy may be associated with the idea, the fact remains that it raised the issue of sustainability to the top of the world's intellectual agenda and has prompted constructive research and discussion of this crucial issue throughout the world.
- (5) WAAS should ask the following question to its entire membership: "*Can you identify three to five original ideas that, if widely publicized, accepted and implemented today, can have the most profound positive impact on the future welfare and well-being of humanity?*"
- (6) The very act of asking this question will help energize and generate greater involvement among our Fellows and communicate to them the Academy's intention of making a real difference in world affairs.
- (7) *Once identified, the Academy can utilize its vast network of relationships with leading thinkers and organizations to project these seminal ideas and partner with other organizations to create an umbrella agency to bring these ideas into public awareness and promote their actual implementation.*
- (8) Strategic Partnerships have a crucial role to play in this strategy. Once the Academy has identified, developed and endorsed a powerful idea for dissemination, it can act as an umbrella or magnet for other organizations with similar or complementary views, so that the idea acquires the characteristics of a social movement.
- (9) Some issues that could lead to the formulation of Real Ideas are discussed below to illustrate the approach.

c. Full and Guaranteed Employment

- (1) Full and guaranteed employment is global in significance and essential for achieving equitable and sustainable human security, yet even ILO has not had the courage to take a clear position on this issue for political reasons. The proceedings of the Academy's Global Employment Challenge include compelling arguments for the adoption of full and guaranteed employment as a fundamental human right and policy of every government. In view of the widespread concern today with high and rising levels of unemployment, effective advocacy of this view could propel this issue to greater international visibility. Through the GEC, WAAS is already associated with a number of organizations committed to this goal. The Academy can partner with organizations such as Club of Rome, ILO, Asian Development Bank, Centre of Full Employment

and Equity, University of Newcastle (Australia); the Cambridge Centre for Economic & Public Policy, University of Cambridge; Levy Economics Institute of Bard College (USA) and the Center for Full Employment and Price Stability (CFEPS), University of Missouri-Kansas City.

- (2) Integration of education with employment – The GEC has documented that a major reason for inadequate job growth is the widening gap between the skills required by modern economies and the actual prevalence of skills in the work force of both economically advanced and developing countries. This is one manifestation of the disconnect between the present system of education and the evolving needs of society. A restructuring of educational methods and content to align it with emerging social needs will dramatically speed job creation and reduce unemployment. WAAS could partner with organizations such as UNESCO, UNDP and UNIDO on this issue.
- (3) Employment and Social Stability – The Academy’s e-project on Global Social Revolution focuses on the linkage between poverty, unemployment, widening economic inequality, social unrest and terrorism. Greater awareness of the relationship between employment and terrorism could focus attention on constructive strategies to address the root causes of social violence.

d. Global Governance

The Academy’s e-project on “From Global Crisis to Sustainable Development” is based on the premise that the proliferation of nuclear weapons and other armaments, the spread of terrorism, the international financial crisis, rising economic inequalities and unemployment, ecological issues related to energy and climate change all have a common basis. Solution to all these issues requires emergence of effective, democratic institutions for global governance. The current unrepresentative character of the UN Security Council, the veto power exercised by its five permanent members, and the absence of a global central bank are a few examples of the limitations of the current system. The Academy could undertake a far-sighted initiative to examine the essential requirements for effective global governance in the coming decades and project a model capable of overcoming the limitations that hamper the transition beyond the nation-state system.

e. World University – a world-changing idea

- (1) One example of an original seminal idea of global significance can be found in the Academy’s original Manifesto. WAAS founders envisioned the possibility of the Academy itself functioning as an informal “world university”, a visionary idea which was far ahead of its time.
- (2) Today that is no longer the case. The enormous increase in demand for higher education all over the world will necessitate development of entirely new models of educational delivery which can accommodate a vast increase in student population with far greater efficiency and lower cost than traditional forms of higher education.

- (3) Technology now makes it possible to consider very different models for delivery of higher education, as different from existing models as Amazon's becoming the largest book seller in the world without operating a single bookstore.
- (4) Internet-based education is not a new idea. Many universities are already offering web-based courses. But none of these constitutes a truly inclusive global approach to delivering higher education. A global system would generate enormous benefits in terms of efficiency and equality of opportunity. Imagine a global network that enables millions of students around the world to access the top academicians in each specialized area of their interest.
- (5) In addition to evolving a new model for delivery of education, the World University should also present an opportunity to found a new intellectual basis for the organization of knowledge based on the principles of Reliable Knowing discussed above.
- (6) A project based on this idea could include
 - a. Examination of the strengths and weaknesses of traditional forms of higher education.
 - b. Assessment of the global demand for higher education over the next few decades and challenges in meeting those needs through traditional means.
 - c. Survey of alternative technology models now in operation or under preparation to identify the most advantageous model.
 - d. Research on alternative bases for the organization of knowledge and education based on the concept of Reliable Knowing.
 - e. Global survey of educational leaders on this issue and one or more international conferences to explore alternative models.
 - f. Identification of global players interested in these issues as potential partners with WAAS, including international organizations such as UNESCO, national governments of developing countries with large populations, scientific and other academic institutions, commercial organizations, etc.
 - g. Research and development of university level on-line course-ware in collaboration with United Nations University.

BOOKS

Towards Green Growth

OECD

Review by Michael Marien, *Global Foresight Books*



This important report is not well-known, unfortunately, and not for summer reading on the beach. But as a sensible, well-documented, and broad-ranging way forward for all nations, addressing many critical problems in one package, there is nothing like it!

At the OECD Ministerial Council Meeting in June 2009, it was agreed that environment and economic growth can go hand-in-hand, and the OECD was asked to develop a Green Growth Strategy. Several Green Growth reports have already been published, and this report summarizes work done so far. OECD will continue to support global efforts to promote green growth, which will be reflected in OECD country reviews and work on green

growth indicators, toolkits, and sectoral studies. (See Table 5.3, p132, for 16 examples of OECD work on green growth and potential directions.)

GENERAL CONSIDERATIONS

“Green growth means fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies. To do this, it must catalyze investment and innovation which will underpin sustained growth and give rise to new economic opportunities. A return to ‘business as usual’ would be unwise and ultimately unsustainable, involving risks that could impose human costs and constraints on economic growth and development.” Risks include increased water scarcity, resource bottlenecks, air and water pollution, and irreversible climate change and biodiversity loss.

Green growth has the potential to address economic and environmental challenges and open up new sources of growth through: 1) *greater productivity* in efficient use of resources and natural assets; 2) *opportunities for innovation*, spurred by policies and framework conditions that allow for new ways to address environmental problems; 3) *new markets and job opportunities* by stimulating demand for green technologies, goods, and services; 4) *boosting investor confidence* through greater predictability and stability

as concerns government response to major environmental issues; 5) *more stability* from balanced macroeconomic conditions and reduced resource price volatility; 6) *reduced risk of negative shocks* from resource bottlenecks and imbalances in natural systems.

There is no “one-size-fits-all” for green growth strategies. Advanced, emerging, and developing countries will face different challenges and opportunities. However, there are common considerations that need to be addressed in all settings. “*Most important, good economic policy lies at the heart of any strategy for green growth.*”

A green growth strategy takes into account the full value of natural capital as a factor of production and its role in growth. It focuses on cost-effective ways of attenuating environmental pressures to effect transition towards new patterns of growth. “Focusing on GDP as a measure of economic progress overlooks the contribution of natural assets to wealth, health, and well-being.” A green growth strategy thus targets a range of measures of progress and incorporates a longer time horizon.

Also, “there are important complementarities between green growth and poverty reduction, which can be capitalized to help drive progress towards the Millennium Development Goals,” e.g. bringing more efficient water and transport infrastructure to people, alleviating poor health associated with environmental degradation, and introducing efficient green technologies that can reduce costs and increase productivity. Green growth is not a replacement for sustainable development, but should be seen as a subset, in that it is narrower in scope.

Policy Framework for Green Growth

Policy Design. Realizing the value of the

natural resource base in a way conducive to growth can employ a wide range of policy instruments: cap-and-trade permit systems, baseline-and-credit permit systems, taxes on pollution or resource use, utilizing subsidies (while removing perverse subsidies that encourage pollution or over-extraction of resources), deposit–refund systems on containers, performance standards, technology standards, active technology support policies, and voluntary approaches.

Market Instruments. For most countries, instruments that directly impact price signals are a necessary, though not always sufficient, condition for greening growth. Such instruments internalize externalities such as pollution, and properly value all factors of production. Use of environmentally related taxes has widened over recent decades (a chart shows environmentally related tax revenues as a percent of GDP for each OECD country in 2009, ranging from less than 1% in Mexico and the US to over 2% in most countries and over 3% in several countries.)

Regulations and the Regulatory Environment. Regulatory policies are crucial elements of the green growth policy framework, presenting incentives for green growth and to improve existing arrangements as concerns resource use, energy efficiency, emissions standards, product market competition, trade and foreign direct investment, and private sector voluntary initiatives.

Changing Consumer Behavior. Pricing use of environmental resources is a powerful tool for influencing household decisions, e.g. households charged for water use 20% less than those that are not. Third party certification can also improve consumer confidence in the green attributes of products.

Innovation. The core of transforming an economy is innovation: not only new

technologies, but organizational and systemic changes involving new ways of doing things. Green technology development is accelerating in some areas, but needs to be boosted with clear and stable market signals (e.g. carbon pricing) and by targeting barriers to early-stage commercial development.

Investing in Infrastructure. Shifting to a greener growth trajectory requires special attention to energy, water, transport, and communications networks. For many countries, especially those outside the OECD, there are opportunities to leap-frog by introducing greener and more efficient infrastructures.

Institutions and Governance. Capacity to implement wide-ranging policy reform is an essential condition for greening growth. For some countries, building such capacity will be the central feature of green growth. Finance and core economic ministries must play a leading role, as well as all levels of government (state-level policies can, however, be beneficial in the absence of federal policy).

Promoting Transition to Green Growth

Develop Strategies for Reform. (See Policy Framework, above.)

Facilitate Adjustment in the Labor Market. As new green sectors and activities develop, other activities may be displaced. Policies involving skills, education, and the labor market can help to smooth the transition by minimizing skill bottlenecks and ensuring that firms and workers are able to seize new opportunities.

Manage Distributional Impacts on Firms and Households. This is crucial to reform success in terms of generating support and ensuring fair and positive outcomes. The policy-making process needs to be

transparent, and affected groups need to be part of the process. Negative impacts on low-income households need to be offset with well-targeted programs.

Promote International Cooperation. Creating a global architecture conducive to greener growth, so that all countries benefit and domestic policy does not have negative consequences for others. Global challenges require cooperation on a global scale to protect the global commons (e.g., the UNEP-led Green Economy Initiative begun in 2008, FAO's project on Greening the Economy with Agriculture, and the Global Green Growth Institute initiated by South Korea in 2010).

Measuring Progress towards Green Growth

*Monitoring progress requires indicators based on internationally comparable data, embedded in a conceptual framework. A small set of "headline indicators" has been selected, and explicated in a companion document, **Towards Green Growth: Monitoring Progress. OECD Indicators** (OECD, June 2011, 141p). Four areas capture the main features of green growth:*

Environmental & Resource Productivity: on aspects of production that are rarely quantified in economic models and accounting frameworks (e.g., carbon and energy productivity);

Environmental Asset Base: to reflect the fact that a declining asset base presents risks to growth (e.g. renewable stocks such as forests and freshwater, non-renewable stocks, soil and wildlife resources);

Environmental Quality of Life: exposure to natural and industrial risks and losses, environmentally-induced health problems and related costs, access to sewage treatment and drinking water;

Economic Opportunities and Policy Responses: on the effect of policy in delivering green growth, e.g.: R&D, patents, innovations, energy pricing, green taxation, water pricing and cost recovery.

Full version of the book is available at OECD as a free PDF:

<http://www.oecd.org/dataoecd/37/34/48224539.pdf>

For more book reviews by Michael Marien, visit:

<http://www.globalforesightbooks.org>

Suggested Books on Climate Change

America's Climate Choices, National Research Council (Committee on America's Climate Choices), Albert Carnesale, National Academics Press, May 1011, 118p. (<http://americasclimatechoices.org>).

Understanding Earth's Deep Past: Lessons for Our Climate Future. National Research Council National Academies Press, Sept. 2011, 194p.

Climate Stabilization Targets: Emissions, Concentrations and Impacts over Decades to Millennia. National Research Council, National Academies Press, Sept.2011, 286p.

For more informations on books related to Climate change, visit

<http://www.cadmusjournal.org/books>

Taming Global Governance Idea Chaos: A “Frontier Frame” for Recent Books

Michael Marien

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How important is global governance? Is there a growing need? If so, as many argue, is progress being made relative to the need? Who is saying what? Are there important trends in thinking? And patterns of similarity in ideas, or wide divergence?

It is certainly a rapidly expanding topic for books. Click on “Global Governance” at Google Books, and one can find 128,000 titles published in the 21st century, contrasted to 62,700 titles in the 20th century, and a bare trickle of five titles in the 19th century. But what do we make of this? Most items listed by Google are marginal or trivial, but still there are many worthwhile books on this topic to ponder.

What follows is a preliminary survey of titles largely published in the past three years, as identified on my experimental website, GlobalForesightBooks.org. The brief abstracts are organized in seven overlapping categories: 1) General; 2) Global Economy; 3) Climate/Environment; 4) Security; 5) Law/Justice/Ethics/Human Rights; 6) Miscellaneous; and 7) Normative Futures. Most of these books have not been seen directly; rather, information has been gleaned from publisher catalogs, which is usually sufficient to get a rough sense of what a book is about.

But first a Prologue of 16 generalized items from the 1990-2004 period, many by WAAS Fellows, of books that were abstracted for *Future Survey*, a monthly publication of the World Future Society that I edited in the 1979-2008 period. This listing is not comprehensive, but merely a highlighting of some important items from the period to indicate how thinking two decades ago was broader and bolder.

1. Prologue, 1990-2004

Thinking about global governance began to accelerate in the early to mid-1990s, with the 50th anniversary of the United Nations celebrated in 1995. Five years before that milestone, WAAS president Harlan Cleveland published **The Global Commons: Policy for the Planet**, offering 60 propositions about the Global Commons as a new policy frontier, including not only the physical and biological commons, but the “brainwork commons” that requires managing the flow of information.¹ Cleveland’s **Birth of a New World: An Open Moment for International Leadership**, examines the growing list of functions that only credible international organizations or regimes can perform, international arrangements that work, and managing a world economy with nobody in charge.² Two years later, Harlan Cleveland,

WAAS Fellow Hazel Henderson, and Inge Kaul edited a Special Issue of *Futures* entitled **The United Nations at Fifty: Policy and Financing Alternatives**, with essays on funding as the key to the future of the UN (by Cleveland), the UN as the world's de facto superpower that should help tame the global financial casino (by Henderson), charging for use of the global commons, a radical restructuring of the UN so it could levy taxes and borrow funds, a surcharge or tax on all arms sales and foreign exchange transactions, rethinking the World Bank and IMF, etc.³

Slightly earlier, Mihaly Simai, Director of the UNU World Institute of Development Economics Research, published **The Future of Global Governance**, arguing that future needs of collective risk management will require membership of most states in IGOs and a change of attitudes toward international cooperation in a new and more complex era of uncertainty and dynamic change.⁴ **Uncommon Opportunities: An Agenda for Peace and Equitable Development**, the very uncommon Report of the International Commission on Peace and Food, was edited by WAAS Fellow (now *CADMUS* managing editor) Garry Jacobs, who served as executive director of the Commission.⁵ This extraordinary report, with prefacing messages by the UN's Boutros Boutros-Ghali and by UNESCO's Federico Mayor, argued that global governance, security, democracy, employment, adequate food, and human development are interlinked and cannot be addressed in isolation. The ambitious agenda included guaranteed rights to human security in its widest meaning, a global cooperative security system, employment as a basic human right, restructuring the UN, halving global defense spending by 2000, reversing small arms proliferation, building an international development force, creating one billion jobs in the next decade, global education, and nurturing a worldwide culture of peace.

James N. Rosenau, a WAAS Fellow and former president of the International Studies Association, provided a number of original and useful ideas. **Turbulence in World Politics** argued that the notion of "international relations" was obsolete, and that "post-international politics" would better describe the shift from some 200 actors in a state-centric world to the multi-centric world with hundreds of thousands of essential actors in temporary coalitions with situational rules.⁶ **Governance Without Government: Order and Change in World Politics**, edited by Rosenau and Ernst-Otto Czempiel, expanded on the themes of a polyarchical world, international regulatory ventures, and strategies to support democratization.⁷ **Along the Domestic-Foreign Frontier: Exploring Governance in a Turbulent World** pointed to the growing need to treat domestic and foreign affairs as a seamless web, at a time when "framegration" (Rosenau's ungainly but accurate term) should be seen as a synthesizing worldview.⁸ WAAS Fellow Steven A. Rosell, president of Meridian International Institute, published **Changing Maps: Governing in a World of Rapid Change**, on constructing shared mental maps in a world of eroding boundaries, multiplying interest groups, and fragmenting institutions and belief systems.⁹ Rosell also posited four scenarios, of which the dark "Titanic Scenario" (of low or no economic growth, lost jobs, increasing unrest and violence) has proved eerily close to the sobering realities of 2011.

The seminal book in this period was the Report of the Commission on Global Governance, **Our Global Neighborhood**, which defined global governance as better management of survival, sharing diversity, and living together in the global neighborhood with a global ethic of common rights and shared responsibilities.¹⁰ Four central areas for the conduct

of world affairs were highlighted: broadening the concept of global security, managing economic interdependence, reforming the UN (e.g., by expanding the Security Council), and strengthening the rule of law worldwide. The quarterly journal *Global Governance* (www.rienner.com) was accordingly founded in 1995, exploring “the impact of international institutions and multilateral processes on economic development, peace and security, human rights, and the preservation of the environment.”

Noteworthy books around the turn of the millennium must surely include **The Capacity to Govern: A Report to the Club of Rome** by WAAS fellow Yehezkel Dror of the Hebrew University of Jerusalem.¹¹ Dror noted an accelerating age of radical transformations which require guidance and the radical redesign of governments at all levels. He described ten characteristics of global change (increasing uncertainty, multiplying complexity, intense frustrations, etc.), ten facets of high quality governance (learning, knowledge-intense, deep-thinking, holistic, etc.), the need to foster *raison d’humanite* as a moral imperative in decisions, empowering people with “public affairs enlightenment,” and making global governance more resolute.

Similarly, WAAS Fellow David Held of the Open U, along with Anthony McGrew and two others, published **Global Transformations: Politics, Economics, and Culture** on the widening, deepening, and speeding up of globalization.¹² Eight key elements: emergence of global politics and multilayered governance, military globalization and the global arms market, global trade, financial globalization, MNCs and globalized production, global migration, cultural globalization, and environmental globalization; in sum, a growing litany of problems and threats leading to international regimes and treaties. This outstanding scholarly overview was supplemented by **The Global Transformations Reader** edited by Held and McGrew, with 43 essays on such topics as mechanisms of global governance, models of global democracy, transnational justice, and the cosmopolitan project to regulate globalization.¹³ WAAS president Walter Truett Anderson provided a somewhat more popularized version of this topic with **All Connected Now: Life in the First Global Civilization**, on the “huge and many-sided evolutionary development that is taking place,” including governance with and without governments, the spread of democracy and human rights, the growing role of NGOs, etc.¹⁴ Federico Mayor (former head of UNESCO) with Jerome Binde (director of UNESCO analysis and forecasting) published **The World Ahead: Our Future in the Making**, on four major challenges of the next few decades (involving peace, poverty, environmental management, and lack of direction), while proposing four ambitious “contracts” (social, natural, cultural, and ethical) as pillars of a new international democracy.¹⁵ Several years later, Anne-Marie Slaughter (Dean, School of Public and International Affairs at Princeton and later US Dept of State director of policy planning, 2009-2011) wrote **A New World Order**, viewing global governance as a world of government networks and building blocks for a future world order based on parts of states: courts, regulatory agencies, ministries, etc.¹⁶ In a brief recent article, Slaughter states that “the world will be *much* more multilateral by 2020,” with the UN Security Council expanded to 25-30 members and much stronger regional organizations on every continent.¹⁷

2. General

All of the books mentioned in the Prologue treat global governance in very broad terms.

Many recent books in this overview category are somewhat more specific.

Can the World be Governed? Possibilities for Effective Multilateralism, views multistate international organizations as key to global governance and its reform, and notes proliferation of governance structures, current and looming crises requiring multilateral solutions, and difficulties of governing the international system.¹⁸ **Rising States, Rising Institutions: Challenges for Global Governance** edited by Alan S. Alexandroff of CIGI and Andrew F. Cooper of University of Toronto notes institutions rising to meet the demand for new forms of governance, models of international cooperation, emerging institutions such as the G-20, the advent of sovereign wealth funds, & forums to foster cooperation on terrorism.¹⁹

The Dark Side of Globalization, edited by Jorge Heine of CIGI and Ramesh Thakur of nearby University of Waterloo looks at the transnational “uncivil society” forces unleashed by globalization (terrorism, drug and human trafficking, money laundering) and explores how governments, IGOs and civil society can deal with these problems. **Governance in a Disenchanted World** by Helmut Willke, Prof of Global Governance at Zeppelin University in Germany notes that the nation-state is losing some regulatory prerogatives while also extending its legitimacy base in “chains of legitimacy.”^{20, 21} But, as noted in **The New Global Rulers: The Privatization of Regulation in the World Economy** by Tim Buthe of Duke University and Walter Mattli of Oxford, governments lack expertise and resources, and have delegated extensive regulatory authority to private sector organizations such as the International Accounting Standards Board and the International Organization for Standardization.²² **Governance without a State** by Thomas Risse of Freie Universitat Berlin discusses security governance by nonstate actors, public-private partnerships to promote the UN Millennium Goals, the role of business in environmental governance, and strategies for effective governance in a framework of weak and ineffective state institutions.²³

Updated textbooks that provide an introductory overview include **The Politics of Global Governance: International Organizations in an Interdependent World** edited by Paul F. Diehl of University of Illinois and Brian Frederking of McKendree University, an anthology of major themes and theories; **International Organizations: The Politics and Processes of Global Governance** by Margaret P. Karns of University of Dayton and Karen A. Mingst of University of Kentucky, on the evolving role of IGOs, NGOs, state and non-state actors, norms and rules, etc.; and **The United Nations and Changing World Politics** by Thomas G. Weiss of CUNY Graduate Center *et al.*^{24, 25, 26}

This leads to the many books on reforming the UN, of which only a few are mentioned here. **Global Governance and the UN: An Unfinished Journey** by Thomas G. Weiss of CUNY and Ramesh Thakur of CIGI describe significant gaps between many global problems and available solutions, and the UN role in addressing terrorism, nuclear proliferation, climate change, etc.²⁷ **The United Nations in the 21st Century: Management and Reform Processes in a Troubled Organization** by Marcus Franda of the University of Maryland analyzes “formidable” barriers to reform created by the UN Charter, and major reforms that have been taken up or rejected, concluding that “rapid reform is simply not possible.”²⁸ Similarly, **The Parliament of Man: The Past, Present, and Future of the United Nations** by Yale historian Paul Kennedy states that the case for reforming the UN is more urgent today,

but massive restructuring is not possible and reforms will and should come piecemeal.²⁹

The OECD: A Study of Organizational Adaptation by Peter Carroll and Aynsley Kellow of the University of Tasmania, describes the successful growth of the Organisation for Economic Co-operation and Development, now celebrating its 50th year, which “helps provide an important degree of coherence in the system of global governance,” publishing hundreds of authoritative reports per year on “what works” among its 34 member nations, and, increasingly other major global players.³⁰ [For an appreciation, see “The OECD Gold Mine at 50” by Michael Marien, a survey of some 100 recent reports.]³¹ The underappreciated OECD is not only an intergovernmental think tank issuing valuable policy analyses, but it has also been instrumental in establishing standards of conduct, e.g.: the Convention on Long-Range Transboundary Air Pollution, the Financial Action Task Force on money laundering, the Principles of Corporate Governance, and much more.

3. World Economy

The most significant and immediate global problem is the Great Recession, which has led to scores of books calling for more financial regulation at the national and/or global levels. **Running the World’s Markets: The Governance of Financial Infrastructure** by Ruben Lee of the Oxford Finance Group laments that there is little global consensus about governance and offers guidelines for an optimal governance model.³² **The Politics of Global Regulation** edited by Walter Mattli of University of Oxford and Ngarie Woods of the Oxford Global Economic Governance Programme shows challenges of a global economy where many institutions are less transparent and held much less accountable than domestic counterparts.³³ **CIGI’09: Towards a Global New Deal** by Manmohan Agarwal and Agata Antkiewicz of CIGI summarizes an Oct 2009 conference on the need for greater regulation, transparency, and macro-coordination.³⁴ **Reforming the International Financial System for Development**, edited by Jomo Kwame Sundaram of the UN, a report prepared for the G24 research program, provides a blueprint for a new global banking model and reserve.³⁵ The UN’s **Trade and Development Report 2011** makes proposals for reforming the international monetary and financial system, as well as commodity markets.³⁶ **Global Leadership in Transition: Making the G20 More Effective and Responsive** edited by Colin I. Bradford of Brookings and CIGI, and Wonhyuk Lim of the Korea Development Institute considers ways to consolidate the G20 to become the “premier forum for international economic cooperation.”³⁷

Dozens of books have been published in critique of the World Bank, IMF, and/or the WTO. Recent additions include **Reforming the World Bank: Twenty Years of Trial—and Error** by David A. Phillips, who offers a governance agenda toward real reform, and **Rescuing the World Bank: A CGD Working Group Report** edited by CGD president Nancy Birdsall, on reforming governance and the need for a Global Public Goods Trust Fund.^{38, 39} **Governing the World Trade Organization** edited by Thomas Cottier and Manfred Elsig maps various pathways to reform, from small steps to radical overhaul for a new global political economy.⁴⁰ In **The Globalization Paradox: Democracy and the Future of the World Economy**, Dani Rodrik of Harvard University questions the benefits of the stalled Doha Round, and even whether global governance of the economy is feasible or desirable: “the global governance option is a dead end for the vast majority of nations.”⁴¹

Rodrik calls for a new narrative to open the next stage of globalization, seven principles for a new globalization, and minimal guidelines for a new global financial system, while pointing to labor markets as the unexploited frontier of globalization.

4. Climate/Environment

Climate change is widely seen as the most significant long-term global problem at present. And many books urge action at global, national, and local levels. **The Global Deal: Climate Change and the Creation of a New Era of Progress and Prosperity** by Sir Nicholas Stern of the London School of Economics, is a popularized version of **The Economics of Climate Change: The Stern Review**, a thorough independent review reporting to the UK Prime Minister, viewing climate change as “the greatest market failure the world has ever seen” and calling for action by all countries—the earlier the less costly.^{42, 43} A similar argument is made by OECD in **Costs of Inaction on Key Environmental Challenges**, and in **The Economics of Climate Change Mitigation: Policies and Options for Global Action**.⁴⁴ ⁴⁵ **Economic Choices in a Warming World** by Christian de Perthuis of University Paris-Dauphine explains the difficulties of reaching global agreement, risks of inaction, and how a post-Kyoto climate regime could emerge.⁴⁶

Managing Institutional Complexity: Regime Interplay and Global Environmental Change edited by Sebastian Oberthur and Oclav Schram Stokke, the product of the International Dimensions of Global Environmental Change research project, offers perspectives on managing institutional interaction to improve synergy and avoid disruption.⁴⁷ **Institutional Dynamics: Emergent Patterns in International Environmental Governance** by Oran R. Young of UC-Santa Barbara provides five case studies of environmental regimes that exemplify emerging patterns.⁴⁸

Discontent with the lack of progress is reflected in **Global Warming Gridlock: Creating More Effective Strategies for Protecting the Planet** by David G. Victor of UC-San Diego, who argues that, rather than engaging the whole world at once, a much better approach would be small groups of “climate clubs” where countries band together and entice the less willing.⁴⁹ Similarly, **Fast Forward: Ethics and Politics in the Age of Global Warming** by Brookings managing director William Antholis and Brookings president Strobe Talbott states that the world cannot wait for a binding global treaty, and that the “Big Four” (US, EU, China, India) must lead the way forward.⁵⁰

Two updated textbooks supply an introductory overview. **Global Environmental Politics** by Pamela S. Chasek of Manhattan College *et al.*, describes environmental regimes and their effectiveness, linkages between environmental politics and development, and the growing role of environment in global security.⁵¹ **Green Planet Blues: Four Decades of Global Environmental Politics** edited by Ken Conca of University of Maryland Harrison Program on the Future Global Agenda and Geoffrey D. Dabelko of the Woodrow Wilson Center collects essays on the structure of the international system, environmental governance institutions, transnational activist networks, etc.⁵²

The Future of International Environmental Law edited by David Leary of University of New South Wales and Balakrishna Pisupati of UNEP examines successes and failures of environmental law in the context of an ever-worsening crisis, and argues that future responses

will be more about good environmental governance than just more treaties and laws.⁵³ **The Art and Craft of International Environmental Law** by Daniel Bodansky of University of Georgia describes how environmental problems get on the international agenda, how environmental law develops, and how law can address obstacles to international cooperation.⁵⁴ **Climate Finance: Regulatory and Funding Strategies for Climate Change and Global Development** edited by Richard B. Stewart *et al.* of NYU points to the enormous amounts of public and private investment needed to limit emissions, which requires national and global regulation of cap-and-trade and offset markets, forest and energy policy, international development funding and trade, and coordinated tax policy.⁵⁵ Similarly, with an even stronger voice, **Global Corruption Report: Climate Change** by Transparency International warns that efforts to address climate change will have a huge price of hundreds of billions of dollars flowing through new and relatively uncoordinated channels; “a dramatic strengthening of governance mechanisms can reduce corruption risk and make climate change policy more effective.”⁵⁶

5. Security

Security is at or near the top of global concerns, recently expanding to include terrorism, climate change, and the UN-promoted notion of “human security.” Threats to security by any definition are expanding, and no writer has argued the contrary. **Power and Responsibility: Building International Order in an Era of Transnational Threats** by Bruce Jones of the NYU Center for International Cooperation *et al.* warns that the post-WWII fabric of global security does not meet today’s challenges, and proposes a new concept of “responsible sovereignty,” new commitments to rule-based international order, an Inter-Governmental Panel on Biological Security, a new climate change framework, global economic security, etc.⁵⁷ **Securing Freedom in the Global Commons** by Scott Jasper of the Naval Postgraduate School points to an ever-expanding range of threats to global security and defense of the global commons as a growing challenge, and offers frameworks to minimize vulnerabilities.⁵⁸ **Enhancing International Preventive Action: Council Special Report** by Paul B. Stares and Micah Zenko of CFR argues that, with its military overstretched and huge fiscal pressures mounting, the US will find it necessary to work with multilateral organizations and regional organizations. The book offers proposals for how the US can strengthen the global architecture for preventive action.⁵⁹ **Global Security Engagement: A New Model for Cooperative Threat Reduction** by the US National Academy of Sciences states that cooperative threat reduction programs must be expanded and redesigned to meet new security challenges.⁶⁰

The Challenge of Abolishing Nuclear Weapons edited by David Krieger of the Nuclear Age Peace Foundation argues that the irrational status quo cannot be sustained and focuses on the role of international law in furthering abolition and post-abolition issues involving state sovereignty.⁶¹ **Strengthening the Nuclear Non-Proliferation Regime** by CFR’s Paul Lettow exposes flaws of the 40-year-old NPT (now “under severe strain”) and proposes a comprehensive strategy for the US, restricting the spread of dual-use technologies and strengthening the ability to detect and respond to noncompliance.⁶² Often overlooked is the vexing problem of smaller weapons, covered in **Small Arms, Crime, and Conflict: Global Governance and the Threat of Armed Violence** edited by Owen Greene and Nic

March, on the nexus between arms availability and armed violence, costs of gun violence, governing small arms and light weapons (SALW), restructuring production of SALW, and issues of governance and control.⁶³ **Beyond Market Forces: Regulating the Global Security Industry** by James Cockayne of the International Peace Institute *et al.*, focuses on the increasingly visible role of private military and security companies, and the need for an adequate regulatory framework.⁶⁴

Other specific security topics include the R2P concept, globalized crime and crime control, and cybersecurity. **International Authority and the Responsibility to Protect** by Anne Orford of the University of Melbourne describes evolution of the R2P idea since 2001, and attempts to ground authority on the capacity to guarantee security.⁶⁵ **Crime and the Global Political Economy** edited by H. Richard Friman of Marquette University focuses on the internationalization of crime control, sovereignty of the offshore world, illicit commerce in peripheral states, human trafficking, Mexican drug trafficking, and global finance in the war on terror.⁶⁶ **Corruption, Global Security, and World Order**, edited by World Peace Foundation president Robert I. Rotberg of Harvard, views corruption, criminals, and criminalized states as a threat to global security, and calls for new sanctions and tougher punishments.⁶⁷ **Promoting Cybersecurity through Internet Governance** by CFR's Robert K. Knake urges the US to promote its vision for a secure Internet as part of national security interests, and expanding the number of countries that are party to the Convention on Cybercrime.⁶⁸ **Networks and States: The Global Politics of Internet Governance** by Milton L. Mueller of Syracuse University discusses the Internet as a source of conflict in international relations and a challenge to state sovereignty, new transnational institutions for Internet governance, formation of the Internet Governance Forum, and the rise of national-level Internet control and security concerns.⁶⁹

6. Law/Justice/Ethics/Human Rights

Law without Nations edited by Austin Sarat *et al.* of Amherst College examines ways in which the growing internationalization of law affects national law, the relationship between cosmopolitan legal ideas and understandings of national identity, and how law divorced from nations can clear the ground for a universal cosmopolitan vision.⁷⁰ **International Law: Contemporary Issues and Future Developments** edited by Sanford R. Silverburg of Catawba University covers R2P and universal jurisdiction, international political economics, the International Court of Justice, humanitarian law, the environment, violence and terrorism, etc.⁷¹ **International Law: Classic and Contemporary Readings** edited by Charlotte Ku and Paul F. Diehl of University of Illinois shows the influence of law on political behavior, and discusses regulating use of force, protecting individual rights and the environment, management of the ocean and outer space commons, and the future evolution of the international legal system.⁷² **The Justice Cascade: How Human Rights Prosecutions Are Changing World Politics** by Kathryn Sikkink of University of Minnesota asserts that, in the past three decades, state leaders have lost immunity from any accountability for human rights violations, and that this shift is changing the face of global politics.⁷³

The Evolution of Human Rights: Visions Seen by Paul Gordon of University of Montana describes the human rights movement, the new Human Rights Council, the ICC, R2P doctrine, terrorism and torture, and activists in NGOs.⁷⁴ **International Human Rights**

Law: An Introduction by David Weissbrodt of University of Minnesota and Connie de la Varga of University of San Francisco covers development of human rights as a domain of international law, emerging rights such as environmental health and peace, UN procedures, and regional systems.⁷⁵ **Human Rights and the Ethics of Globalization** by Daniel E. Lee of Augustana College and Elizabeth J. Lee maps out philosophical foundations of an ethics of globalization and considers how to enforce global compliance with basic human rights standards.⁷⁶ **The Ethics of Global Governance** edited by Antonio Franceschet of University of Calgary considers hard moral choices in a complex world order, humanitarian intervention, ethical limits of democracy promotion, ethics of global economic governance, environmental ethics, and UN reform.⁷⁷

7. Miscellaneous

The New Dynamics of Multilateralism: Diplomacy, International Organizations, and Global Governance edited by James P. Muldoon Jr. of the Rutgers University Center for Global Change and Governance *et al.*, shows how diplomacy helps to transform the international system of governance, mechanisms of multilateralism, international secretariats, etc.⁷⁸ **Upgrading the EU's Role as Global Actor** by Michael Emerson of CEPS *et al.*, focuses on improving the EU presence in the multilateral system of organizations and conventions of international law.⁷⁹ **Cross-Border Governance in Asia: Regional Issues and Mechanisms** edited by G. Shabbir Cheema of the East-West Center *et al.*, describes the growing list of cross-border issues addressed by strategic alliances at regional level.⁸⁰ **International Migration** edited by Khalis Koser of the Geneva Centre for Security Policy, considers global governance of migration, a new protection framework for survival migration, climate change migration, **Migration Apparatus: Security, Labor, and Policymaking in the European Union** by Gregory Feldman of UBC sketches the EU's emerging migration management apparatus that combines a "whirlwind of disparate policies" and attempts to harmonize legal channels for labor migrants.^{81, 82}

Illustrative of single-purpose regimes, **Global Governance of Hazardous Chemicals: Challenges of Multilevel Management** by Henrik Selin of Boston University suggests the future of the chemicals regime, under continuous development since the 1960s, as states and organizations collaborate at different governance levels to mitigate related health and environmental problems; four multilateral treaties form the core of the regime, e.g. the 1989 Basel Convention and the 2001 Stockholm Convention.⁸³ **Global Compact International Yearbook 2010** reports on the UN Global Compact, begun in 2000 to shape corporate responsibility, which now has over 7,300 business and non-business participants.⁸⁴ **The Politics of Space Security** by James Clay Moltz of the Naval Postgraduate School considers trends in military space developments and the need for all countries to commit to interdependent, environmentally-focused space activity.⁸⁵ In contrast to evolving and prospective regimes, the global drug control regime has markedly failed, according to **War on Drugs: Report of the Global Commission on Drug Policy**, which states that "fundamental reforms in national and global drug control policies are urgently needed," transforming the global drug prohibition regime with fiscally responsible policies grounded in science, health, security, and human rights (members of the Commission include Kofi Annan, George Schultz, and former presidents, of Brazil, Colombia, and Mexico).⁸⁶ **Governing Universities Globally:**

Organizations, Regulation and Rankings by Roger King of the Open University and LSE describes the growing influence of global regulatory governance on universities and national higher education systems.⁸⁷

8. Normative Futures

Many books point to desirable and often idealized directions for global governance. An appropriate albeit generalized lead-off is **The Unfinished Global Revolution: The Pursuit of a New International Politics** by former UN Deputy Secretary-General Mark Malloch-Brown, urging a system of international institutions that has strength and flexibility to handle the unexpected. “We must harness globalization to a vision of bringing benefit to all, at least a basic threshold of human security, well-being, and opportunity. We must demonstrate that global governance can deliver economic fairness between nations; security for people from overbearing states; and agreed rules for sharing our finite natural resources, and above all the processes to manage global change.” Creation of a global contract (probably never to be captured in a single document, name, or even concept) is critical—the anchor by which new and strengthened institutions will be attached to a global purpose that makes sense to people—“the anchor for our shared future.”

The 15th edition of the Millennium Project’s annual report, **2011 State of the Future** by Jerome C. Glenn, Theodore J. Gordon, and Elizabeth Florescu (StateOfTheFuture.org, Aug 2011, 117p,) updates 15 Global Challenges (including encouraging genuine democracy and long-term global perspectives, ethical market economies and ethical global decisions, and dealing with transnational organized crime), concluding that global challenges facing humanity are transnational, requiring “a world increasingly governed by coordinated and mutually supporting global policies implemented at national and local levels.” **Commonwealth** by Michael Hardt of Duke University and Antonio Negri considers models of governance adequate to a global commonwealth, and proposes a constitution for our common wealth and an ethics of freedom for living in our common world.⁸⁸ **Global Politics in the Human Interest** by Mel Gurtov of Portland State University proposes a Global Humanist Framework and a “new realism” agenda to transform world politics in positive ways through common security, stronger global standards, and education for a global citizenry.⁸⁹

Global Civics: Responsibilities and Rights in an Interdependent World edited by Brookings senior fellow Hakan Altınay argues that we cannot achieve needed cooperation for a globalizing century without some sort of “global civics” curriculum for institutions of higher learning.⁹⁰ **Global Action Networks: Creating Our Future Together** by Steve Waddell of Boston College views world governments as overwhelmed with problems, and looks at the promise of GANs to mobilize resources, bridge divides, and promote long-term deep change and innovation.⁹¹ Another important NGO is the WSF, described in the **Handbook on World Social Forum Activism** edited by Jackie Smith of University of Notre Dame *et al.*, describing the WSF process that began in 2001 united by the slogan that “Another World is Possible,” one more democratic and just.⁹² **Building Global Democracy? Civil Society and Accountable Global Governance** edited by Jan Aart Scholte of the University of Warwick describes how civil society can make global governance institutions such as the UN and WTO more democratically accountable.⁹³

Another ongoing movement is the Global Marshall Plan Initiative based in Hamburg, begun in 2003 by 16 NGOs including the Club of Rome and the Club of Budapest, seeking a better design of globalization and global economic processes. **Towards a World in Balance: A Virtual Congress for a Better Balanced World** proposes a Virtual Planetary Congress that would gradually establish a worldwide Eco-Social Market Economy.⁹⁴ **The Earth Charter: A Framework for Global Governance** edited by Ron Engel and Klaus Bosselmann describes the Charter as the leading ethical framework for global governance, and discusses challenges surrounding current international law and governance.⁹⁵ **A Global Green New Deal: Rethinking the Economic Recovery** by Edward B. Barbier of University of Wyoming presents a strategy for ensuring a more economically and environmentally sustainable recovery.⁹⁶ Similarly, **Achieving Global Sustainability** edited by Takamitsu Sawa *et al.* also proposes a “Green New Deal” along with a paradigm shift on economic growth.⁹⁷

2048: Humanity’s Agreement to Live Together by J. Kirk Boyd of the UC-Berkeley School of Law argues that the provisions of the 1948 Universal Declaration of Human Rights are not viable and its promise has not been fulfilled; an enforceable International Convention is proposed by the 100th anniversary of the UDHR to guarantee five freedoms: of speech, of religion, from want, from fear, and for the environment.^{98,99} **Patterns of Potential Human Progress. Vol 1: Reducing Global Poverty** by Barry B. Hughes of the University of Denver Pardee Center for International Futures argues that the horizon of global goal-setting should be at least to 2030, and 2050 seems reasonable.¹⁰⁰

And there are several even more ambitious schemes for global governance. **The Grand Convergence: Economic and Political Aspects of Human Progress** by James A. Yunker of Western Illinois University advocates sweeping changes in economic and political structure to ensure the prospects of global human civilization, arguing for both the Global Marshall Plan and for a limited federal world government.¹⁰¹ **World Federalist Manifesto: Guide to Political Globalization** by WAAS fellow and Club of Rome USA president Francesco Stipo proposes unification of the UN system through a single budget and voting system, and a Trans-Atlantic Free Trade Area merging NAFTA with the EU and leading to a North Atlantic Confederation.¹⁰² **Symposium: Envisioning a More Democratic Global System** edited by Andrew Strauss of Widener University looks at ways to create a Global Parliamentary Assembly and the E-Parliament (www.e-Parl.net) as a new global forum for democratic problem-solving.¹⁰³

9. Taming the Chaos in Ideas

Global governance is clearly taking shape in complex and chaotic ways, with widespread dissatisfaction of present arrangements and numerous proposals for betterment—all at a time when many national governments are also being questioned, arguably due, at least in part, to deficiencies in global governance and international accords. But which proposals, if any, are heeded, and with what influence?

This biblio-essay covers most of the recent English-language books on global governance, arranged in a “frontier frame” of several categories. But it is only a rough introduction. If global governance is very important, attention should be paid to what Harlan Cleveland in

1990 called “managing” the “brainwork commons,” and to building what Yehezkel Dror in 2001 called “the capacity to govern.” As clearly and amply demonstrated here, this multifaceted commons is huge and disorganized. Yet another book on one of the many facets of global governance will be of little or no help; what is needed is a visible synthesizing framework to make sense of it all, and a better and hopefully synergetic balance between horizontal generalizing and specific analyses.

Next steps to tame the unruly Global Governance Information Commons should involve a Task Force dedicated to providing a neutral clearinghouse of ideas appearing in books, reports, and articles, with actions such as:

- More extensive abstracting of items identified here, as well as proposals over the last two decades, with indexes by author and subject;
- Efforts to identify global governance thinking in non-English languages and/or by thinkers in the BRIC countries (Brazil, Russia, India, and China);
- Analysis and critique of similarities and differences in proposals for managing the global economy, greenhouse emissions, human rights, migration, cooperative security, etc. to include both near-term cautious proposals and more far-ranging normative visions.
- Maintenance of a website to accommodate the latest thinking;
- Publication of an annual guidebook that surveys all global governance ideas, similar to the innumerable travel guides to countries and cities, with translation into several languages;
- One or more spokespersons writing magazine and newspaper articles and op-eds to promote improved global governance discourse;
- Creation of one or more feature-length documentary films on global governance issues (many excellent documentaries have been filmed in the past few years, appealing to an increasingly visual culture; this could greatly widen the appreciation of global governance issues, while expanding the underdeveloped market for related books).

This proposed Global Governance Clearinghouse seeks to accelerate learning about global governance issues, among both experts and the public, at a time when governance at all levels is a matter of great concern and discontent. The costs of this project are relatively small—far less than a single F-15 fighter plane, for example. The benefits in terms of national and human security and well-being could be huge. Taming the information commons to some degree could work. It is worth a try.

Note: A more comprehensive range of books is reviewed in the online version in the books section of www.cadmusjournal.org.

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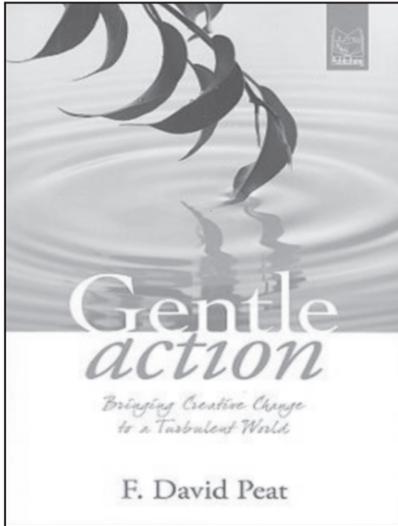
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Gentle Action: Bringing Creative Change to a Turbulent World

David Peat

ISBN: 978-88-95604-03-9

Format: paperback, 176pp.



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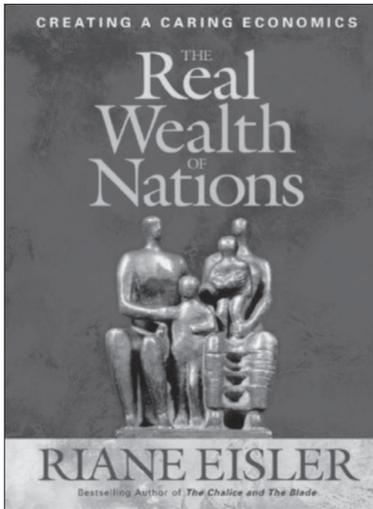
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In his new book *Gentle Action: Bringing Creative Change to a Turbulent World* David Peat argues that while individuals, organizations or governments take action or give aid, often from the best of motives, it is sometimes the case that such action is disruptive and damaging to a community, economy or environment. The reasons are that in some many cases plans and policies do not take into account the complexity and delicate nature of the systems that surround us. Moreover the nature of the organization that attempts to bring about positive change may be more rigid than the system it seeks to alter. In addition so often the organization is now working from within the system but imposing change from outside.

The solutions proposed in the book are that new forms of “gentle action” are needed, actions which begin from within the system in question and emerge in creative ways. These may range from projects on an international scale to a simple action by an individual. Such actions generally flow from what Peat has termed “creative suspension” - that temporary pause when we listen and learn what the system has to teach us before taking action.

The Real Wealth of Nations: Creating a Caring Economics by Riane Eisler



“**The Real Wealth of Nations** gives us a template for the better world that we have been so urgently seeking. As practical as it is hopeful, this brilliant book shows how we can build economic systems that meet both our material and spiritual needs.”—Archbishop Desmond Tutu, Nobel Peace Laureate

“Eisler precisely maps her detailed vision of a caring economy and diligently supports her concept with a fascinating spectrum of information and analysis of everything from how little we value child care to the true cost of war and pollution” —*Booklist*

“An essential tool for government leaders, politicians, economists, and everyone looking for ways to halt environmental destruction, eradicate poverty, stabilize population, and build a better future” — *The Honorable Vigdis Finnbogadóttir, President of the Republic of Iceland 1980-1996*

The Real Wealth of Nations points the way to the sustainable and equitable economy urgently needed at this critical time. Eisler argues that the real wealth of a nation is its people and nature. As we shift into the postindustrial knowledge/service economy, our greatest priority must be human capacity development. Contrary to popular beliefs, caring policies and practices are extremely cost-effective. Businesses that care for their employees have superior shareholder returns on investment. Nations such as Norway, Sweden, and Finland, which invest heavily in caring for people and nature, rank at the top of the World Economic Forum’s Global Competitiveness Reports, the UN Human Development Reports, and international student testing levels, and women are approximately 40 percent of national legislators. As women are more equal partners, men are more likely to recognize the social and economic value of stereotypically feminine activities such as caring and caregiving – whether performed by women or men in homes or workplaces. To solve our problems – from cyclic economic crises and economic injustice to high crime rates and lack of real support for families – we must move beyond the tired old argument between capitalism and socialism and shift to what we urgently need: a “caring economics” that works for us all —and for our planet.

Riane Eisler is a social scientist, attorney, author, and social activist, author of *The Chalice* and *The Blade*, president of the Center for Partnership Studies and WAAS Fellow.



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- *Introduction to “The Limits to Certainty” - a report to the Club of Rome, Kluwer Academic Publishers Dordrecht - International Studies in the Service Economy*

This report is also available in French, German, Italian, Rumanian, Spanish, Japanese

DOCUMENTS

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

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The Employment Dilemma and the Future of Work

Report to the Club of Rome

By **Orio Giarini & Patrick M. Liedtke**

Second edition • 151 pages • CHF 60

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

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Orio Giarini is a Member of the Board of Trustees of World Academy of Art & Science; Director of the Risk Institute (Geneva and Trieste), a European Research Institution for the New Welfare Society, and Editor-in-Chief of *The European Papers on the New Welfare*. He was formerly Secretary General of “The Geneva Association”, Member of the Executive Board of the Club of Rome and professor at the University of Geneva, lecturing on the New Service Economy.

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

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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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