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CADMUS

NEW PERSPECTIVES ON MAJOR GLOBAL ISSUES

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Upcoming Event

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2nd International Conference on Future Education:

Effective Learning in an Age of Increasing Speed, Complexity and Uncertainty

Inside this Issue

Knowledge of the Whole

The mental world we live in today is infinitely divided into categories, subjects, disciplines, topics, and their more and more specialized subdivisions. As a result American universities now offer more than 1000 specialized subdisciplines. Specialization is a power of knowledge to uncover the intricate mysteries concealed in the infinitesimal. Many of the marvellous things we use and enjoy today are a result of this minute investigation. But no matter how much we try, our lives cannot be so readily divided into innumerable airtight compartments. The quest for right knowledge too often reduces to selecting some aspects of knowledge that fit neatly together into a conceptual framework and ignoring or rejecting those that do not. This process of acceptance and rejection may elevate our specialized knowledge of the part but it is likely to overlook profound truths about the whole. Thought is the power to link and relate two or more things together. Knowledge is the capacity to see each thing in right relationship to everything else.

The challenges confronting humanity today are very largely the result of this fragmentation of knowledge that views financial markets as separate and almost independent of the real economy, technological development as if it can be embraced without any regard for its impact on employment, markets as if they can function independent of law and regulation and regardless of their impact on society and the environment, social policy as if it can be divorced from human values, and education of the mind as if it can be separated from development of personality. The devastating impact of modern society on the natural environment is a direct consequence of this fragmentation of knowledge.

The knowledge humanity needs today to effectively address these challenges is a knowledge based on truths that complement and complete other truths rather than those that compete and oppose all other perspectives. Only then can our knowledge be fully rational. Every viewpoint that survives rational scrutiny possesses at least a grain of truth that can enhance our understanding of the whole. The need for more integrated knowledge is especially apparent today in the social sciences where humanity is confronted by problems that deny solution by piecemeal analysis and fragmented strategies. The real solution to the problem of climate change lies in healing this fractured image of reality and restoring a vision that reconnects us mentally and emotionally with each other and the world in which we live. A holistic understanding is the first essential condition for healing society and the planet.

The articles in this issue of *Cadmus* present perspectives that highlight linkages and relationships between different aspects of knowledge in diverse fields of life—economics, education, governance, history, law, security, science and technology—which are more often examined in isolation from one another. Taken individually these articles provide a rich variety of insights into specific fields. Taken together they sketch the outlines of a more integrated knowledge of society and human evolution.

We hope you enjoy this issue.

The Editors

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Globalisation Trapped

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Abstract

The promise of making society progress through the direct applications of science was finally fulfilled in the mid-20th century. Science progressed immensely, propelled by the effects of the two world wars. The first science-based technologies saw the daylight during the 1940s and their transformative power was such that neither the military, nor subsequently the markets, allowed science to return intact to its curiosity-driven nest. Technoscience was born then and (being progressively pulled away from curiosity-driven science) was able to grow enormously, erecting a formidable structure of networks of institutions that impacted decisively on the economy. It is a paradox, or maybe a trap, that the fulfillment of science's solemn promise of 'transforming nature' means seeing ourselves and our Western societies entangled in crises after crises with no clear outcome in view. A redistribution of geopolitical power is under way, along with the deployment of information and communication technologies, forcing dominant structures to oscillate, as knowledge about organization and methods, marketing, design, and software begins to challenge the role of technoscience as the main vector of economic growth and wealth accumulation. What ought to be done?

The most eventful invention of the dawn of Modernity was that of the Florentine masters of the Quattrocento: a new representation of the natural world. Linear perspective was a new way of looking at reality, the first step to initiate its transformation. Linear perspective separated clearly the subject, the observer, from the object which was observed. The size of any object relative to those of other objects depicted in a context depends only on its distance to the observer, the subject that is representing reality. Previously, divinities were no longer larger than men: in fact, their apparent magnitude was a function solely of their remoteness from the observer. That these representations came to be accepted as "objective" stems certainly from the fact that they could be assimilated to those obtained through the use of an instrument—the "camera obscura". It was this mental association that allowed conceptually the separation of light (a physical phenomenon) from vision (a physiological capacity).

1. From a Culture of Separation

The intellectual strength of modernity springs from the surprising capacity and robustness of "separation" as a method of analysis of natural phenomena. A new culture of critical tendency and experimental basis emerged, progressively validated by the flood of new discoveries pervading Europe—of new lands, new peoples, new skies and new stars. The old order was discredited and a new worldview took form. This worldview, of a "geometrical"

character, consisted in searching for symmetries in nature, which in themselves concealed principles of invariance that, in turn, led to the formulation of laws for the natural world. The laws are permanent, eternal and absolute, describing the behavior of bodies in the universe since time immemorial extending to infinity. They are formulated in mathematical language since Galileo declared that the Book of Nature was written in mathematical language, separating it from the other holy book, the Bible, which was written in the natural language. The objectivity of the laws of nature was assured by the use of instruments and their validity by the publication of observations and measurements.

"Instead of the economy being embedded in social relations, as in the past, now it was social relations that became embedded in the economic system."

The legitimacy of this separation was granted by the sheer strength of the Reformation in the Protestant nations in which the new churches—separated from the secular forces that were building the State—were also in construction. The general climate of growing trade and business related to ocean navigation supported a further separation: that of a private sphere within what until then was the (public) domain of an agrarian society. Cities were the beacons of this spirit of modernity. And new Academies of Sciences were created to enshrine and nurture that spirit. The force of this geometrical worldview was still echoing loudly in the 19th century: Cézanne asserted conclusively that all forms of nature could be reverted to the sphere, the cone and the cylinder.

The triumph of modernity was the victory of this culture of trade, military power, navigation, finance, private appropriation and new knowledge. It came as no surprise that the first conflict in the disciplines of knowledge was the separation of philosophy from theology, as philosophers started to give priority to the empirical analysis of reality.

This was the first serious challenge to the millenarian affirmation of religious authorities who thought that they were the sole owners of the way to truth. Philosophers claimed that philosophical intuition was as legitimate a source of truth as divine revelation! The separation of mind from matter was then established, as expected.

A subsequent separation was that of natural philosophy (which adopted the designation of "science") from philosophy. Scientists, pursuing a way of theorization based on induction, supported by empirical, replicable and verifiable observation, opposed metaphysical deduction as a speculation which could not contain elements of truth. This rift was not without consequences: separated from philosophy and the humanities, scientists developed an a-historical and cumulative conception of scientific knowledge and its progresses, which supported a claim of neutrality in social terms.

Science started out as physics, and physics for Galileo was mechanics. The "mechanical" impetus of modernity through the advances in engineering, warfare and navigation was so strong that mathematics—which until the 16th century had been the way we dealt with nature

(through counting and numbers [arithmetic], forms and measurement [geometry], proportions and harmony [music], and positions and motions of heavenly bodies [astronomy])—was abstracted from nature to become only its language; physics (mechanics) became nature. This helped and enhanced the conception of mathematics as a symbolic language, enabling the separation of natural beings from natural rules, i.e., of objects from models, of ontology from epistemology. This scheme was met with an astonishing success—as overwhelming as the victories that modern European nations were experiencing in their expansion throughout the world. Who could doubt what one's eyes were seeing?

"If we think that crises are terrible and destructive, we better be prepared for the next wave of structural change in the 2030s."

The new world of modernity—the terrestrial globe, not the territories around the Mediterranean Sea—was nurtured by the separation of space from time, and by the new concepts derived from the empire of the laws of nature. Space became appropriable till infinity and time became linear.

No wonder that the new social organizations that were able to fully interpret and conjugate these notions—the new companies or enterprises—provided the economic success of modernity. The new wealth they generated warranted their existence and proliferation. They became aware of the importance of technology in the mastering of time through the invention of machines. No wonder also that the Industrial Revolution was intrinsically a revolution in mechanical force and artifacts. The mastery of space was warranted by the development of market economies, through the incorporation and development of cities' economies (first at the national level and subsequently overseas).

Modernity allowed capitalism to flourish. Capitalism is a regime of societal power based on the rights to private ownership of the means of production (which have been dramatically extended to all domains of human life during the course of the last hundred years) and on the wealth generated by this appropriation. Its principle is the maximization of the accumulation of capital, which is limited solely by the "scarcity" of resources or by the "ignorance" of the knowledge that allows its further accumulation. Capitalism also needs an inter-state system that guarantees the legal property of accumulated capital—a fact that is sometimes forgotten. Modernity provided the adequate framework for the endeavor of capital: a powerful engine (the modern enterprise); a search for technological inventions to fuel the engine; a progressive de-materialization of money through financial innovations; and, an interstate system that progressively expanded in the world. Capital accumulation became indefinite.

The growth of economic activity and wealth associated with the industrial revolution had an enormous impact on society. A new vector of capital accumulation emerged and the control of economic system by the markets (i.e., the meeting places of long-distance exchanges) was established. The transformation of society was also deep and full of consequences. It brought about further separations in daily life. Industrial societies saw an inversion in the relation

between the economic and the social spheres: instead of the economy being embedded in social relations, as in the past, now it was social relations that became embedded in the economic system. The economy was separated from society and, further, home became separated from work. The concept of employment was born.

"That a major crisis is developing in Western societies in the first decade of the 21st century is probably not a random coincidence. History does not repeat itself; it is rather human mistakes that tend to repeat themselves, over and over again, creating cycles, not of economic development but of human behaviour."

But the system was intrinsically prone to crises, namely crises of structural adjustment due to evolving production structures and infrastructures. Infrastructures are difficult to transform: they require voluminous investments and costly adaptations to the new basic conditions of economic activity. Every two generations, at least since the dawn of the industrial revolution, we have witnessed a crisis of this type. The technical infrastructure of production was transformed accordingly (through the 1830s) from water-powered mechanization to steam-powered mechanization, then through electrification (from the 1880s onwards) to full motorization (from the 1930s onwards) through cheap oil and mass production. The present situation, which can be described as a computerization of the entire economy, emerged in the 1980s. If we think that crises are terrible and destructive, we better be prepared for the next wave of structural change in the 2030s.

A capitalist market economy lives always in an intimate arrangement with an interstate political system. It needs a strong interstate system to enforce the property laws that allow capital accumulation, as stated before. Capital, in turn, feeds its partner, allowing it to survive. This is why only hegemons and not empires are permitted in interstate systems. Capital is allergic to caps. And hegemons do not live as such forever. They are not able to set the rules of the game indefinitely. Every fourth generation we have witnessed crises (another type of crises) which degenerate into wars where the hegemons are replaced by other hegemonic nations. We observed this in the decades following 1610 (the Thirty Years' War), then in the 1710s (the war of the Spanish succession), in the 1810s (the Napoleonic wars) and after 1910 (the two World Wars). With the present expansion of the world-system encompassing almost the whole of our planet we cannot rule out the current "oil wars" as signaling the possible demise of the American hegemon. That a major crisis is developing in Western societies in the first decade of the 21st century is probably not a random coincidence. History does not repeat itself; it is rather human mistakes that tend to repeat themselves, over and over again, creating cycles, not of economic development but of human behaviour.

Modernity was fashioned by means of a culture of separation. The power of this way of dealing with reality brought enormous wealth and prosperity to modern nations. By the end of the 19th century four values summarized the preeminence of modern culture: nature (an

infinite resource that could be transformed by the knowledge of its laws); science (the legitimate way to discover truth); universality (the values and perceptions of European peoples were imposed on and accepted in all corners of the world); and, sovereignty (each state was like an atom, indivisible and acting as a legitimate component in the interstate system).

The 20th century pushed forward these concepts under the joyous leadership of the new hegemon across the Atlantic. Further separations ensued, mainly stemming from the overspecialization promoted by the education system, which by that time was reorganized to respond to objectives of the market economy such as fierce competition and higher technological levels. Science progressed immensely, propelled by the World Wars' effect.

It was following this path that science met its defining point of separation. The first science-based technologies saw the light during the 1940s to never leave our world again. Their transformative power was such that neither the military, nor subsequently the markets, let science return intact to its curiosity-driven realm. Technoscience was born with the atom bomb. Progressively pulled away from curiosity-driven science, technoscience grew enormously and impacted strongly on the economy. This was not without problems, of course. The neutrality of science (read technoscience) was definitively dead. "We lost our innocence," uttered Oppenheimer at Alamogordo. He understood then that the long-term and well-established value of science was being lost. But he could not yet foresee its consequences.

2. To a Separation of Cultures

The world was transformed further in the 1950s under the Cold War regime. The "oil crises" of the 70s set the stage for the deployment of the first socially selected product of technoscience: the information and communication technologies. A new period of techno-economic structural development was initiated, a period in which we are living in, approaching the maturity of the solutions that those science-based technologies have provided for the time-span of one generation. But these solutions were naturally associated with a whole array of new issues. Information and communication exploded—a second revolution that has profoundly changed the perception of life in our planet. Terrestrial space has "shrunk" and knowledge travels around the world at the speed of light. Finance took increasing control of the economy and finally captured it, through further dematerialization of the monetarized system (another essential effect of the industrial revolution)—money is a convention. Finance has been the driving force since the initial stages of globalization: using the new technologies, finance extended the capacity of coordination at a distance (meaning: beyond political borders). The end of the Cold War further accelerated this tendency and, as a result, a multitude of new opportunities emerged and new networks were created to exploit them, challenging the existing mechanisms. Fierce competition between actors ensued and the expansion of market economies was fed by increasing inputs of new knowledge relevant for commercial operations: organization and methods, marketing, design, software, specialized training. New services and activities surged with high economic impact. And each of them developed its own culture.

Increasing growth and separation gave us much more than just two cultures (the transfer into the 20th century of the fierce debate of Enlightenment). We can now distinguish in our societies, besides the cultures of science and the humanities, a culture of social science (strengthened through the invention of post-modernism) and well-defined cultures in politics, business, media, military, religion, and education, as well as diverse cultures of risk, violence and individual autonomy.

> *"Complexity is the impossibility of separating a system from its context, a living being from its environment, an object from its measuring instrument."*

We evolved a full *macédoine* of cultures. But, worse, in this new Babel, the same individual person can switch from rationality (say, in politics) to the realms of the obscure, in just a click, making the resurgence of ignorance and mysticism seem a business like any other.

Therefore, the tremendous task placed on the shoulders of the coming generations is paradoxically very simple: strive for a new and novel integration of cultures. The reason is also very simple: modernity is exhausted. As argued below, modernity has been drained by financial capitalism; it was even led to transform the future (a founding value) into a mockery of itself, through short-sighted, sick and exclusive preoccupations centered on the present.

We live in a world of uncertainty. But we have never lived in an uncertain world! We were able in the past to generate mechanisms to reduce uncertainty by proposing order and classifying reality. But finally, all institutions evolve, i.e., adapt or disappear. Let us take three examples. First, the medieval Church. The church controlled ignorance through the invention of sin and repentance. Their method was based on confession. But religion is prone to fundamentalism and, so, is averse to diversity. The disregard of modernity towards the past and its ancestors quenched and sank the power of the Church of Rome. Second, the nation state. The control of ignorance was accomplished via the introduction of an education system and the creation of degrees. This system, which stimulated critical thinking and taught us how to judge the credibility of the sources of knowledge, was implemented together with a powerful method of examination. But the state is also prone to conflicts of interest, and globalization has been actively promoting its weakness, by destroying its timid impulses to resist financial discipline. Finally, the markets: market economies control ignorance through the emergence of a vigorous industry of consultants. The method of consultancy firms is based on the free use of advertising to achieve their objectives. But markets are intrinsically prone to crises: there goes confidence down the drain. Nobody is perfect!

We are living through a deep crisis that originated in a conjugation of different processes: geopolitical, techno-economic, cognitive. The separation of cultures has led us here, and we have let these crises entangle with one another like schoolchildren. Everything is connected today. We live in a complex world. We are surrounded by complexity. We know today that we are the products of complexity. This is what is new.

All the grand challenges we face today, from climate change to sustainable living, from innovation to the management of cities, are complex by nature. But what is complexity? Very simply, complexity is the impossibility of separating a system from its context, a living being from its environment, an object from its measuring instrument. Exit separation!

We can say that we live in (and are thermodynamically) open systems. The intellectual apparatus devised by the end of the 19th century, composed of determinism (i.e., information conservation), reductionism (i.e. the use of mathematical language) and dualism (i.e. the independence of the observer), is severely flawed with regard to the representation of reality. We know that the progressive substitution of human labour by machines—at first mechanical, and now communication-driven—has dramatically changed the condition of work and employment and the social structures in which they were in turn embedded. The effectiveness of advanced economies derives from their capacity for operating science-based innovation systems, but what matters most in their performance is the quality of their governance. But how do we understand the whole, especially in the absence of a culture of integration? Maybe we will have to define a new epistemic objective, different from that of "progress through the transformation of nature", the aim of modernity.

But before that, we have to understand how values have changed, to assess where and how a new culture is desperately needed.

We may discern four cognitive crises unfolding before our eyes (each corresponding to a well-established value of modernity): a crisis of nature; a crisis of science; a crisis of the universal; and, a crisis of sovereignty. In each of these crises, a new concept has emerged to perturb and displace the characteristic word of the culture of modernity (nature, science, universality, sovereignty)—respectively: the environment; knowledge (as in the "knowledge-economy"); the global; and, governance.

The notion of environment today has the relevance we attributed in the past to nature. But we then understood nature as a scenario—eternal—where phenomena were taking place. We could attempt at controlling or transforming nature, but nature would always be there, unharmed. Now, with the concept of environment, a big change occurs: the environment is no longer the permanent scenario, but the stage where the actors perform (in fact there is no scenario). And there is no author, nor a plot; the actors create their own narrative as they play and they are responsible for the outcomes, inclusively for the deterioration of the stage. An evil power is creeping in: it declares the future as worse than today, so the motto is: let us recentre our efforts on the present—the opposite of modernity. A feeling of anguish with respect to the future is being instilled.

The word 'knowledge' is being redefined so as to signify the set of fields (law, organization, marketing, design, software, training) that together with technoscience feed the success of the new services and the new economy in the globalised world. It has displaced science in all policy-oriented documents written after 1990. But science was not just a mere instrument of the economy, a straightforward source of new technologies. Science was for three centuries the main element of support of the worldview of modernity and the most important criterion in the search of truth. Its culture signified the constructive role of error and of objection,

one of the most important elements for establishing the concept of citizenship. Science aimed at eternity, offered a vision for the long-term.

"The world today is a computer-ized jungle."

The new word knowledge is a vassal of the markets and their daily operations. Markets welcome change but ignore the long-term effects. Their frenetic search for (economic) value makes them myopic. Consequently, knowledge is suffering from short-sightedness nowadays. The feeling of short-termism is rampant.

The notion of globalization has displaced that of universality. For two centuries we enjoyed the rule of the universal. We had permanent, sacred and eternal rights just because of the fact that we were born. These rights were introduced to protect the citizen from the powers of the state and to allow the free exercise of citizenship. Of course, the process of exercising one's rights has not been easy, nor linear. Social progress and welfare were the culmination of a lengthy fight, punctuated by eventful battles. But globalization has introduced a wicked twist in this framework. In the realm of globalization there are no acquired rights, but just contracts, where rights have to be negotiated and re-negotiated continuously. The place of the individual citizens has to be conquered in the markets, their performance optimized, their utility demonstrated. A systematic process of negotiation, profitability, competition is at work. People are dispensable, their importance resides in their function—as producers or as consumers—they were transformed, actually, into resources: human resources! They have to be recyclable (through life-long learning!), or otherwise they represent no value to the markets. They become a nuisance and can be eliminated if they are of no economic utility. The world today is a computerized jungle. There is a kind of hush all over the world. Oppression is back in town.

Governance has swiftly substituted sovereignty. For centuries, the states (and the balance of force) have been the cornerstones of the order that was established by Westphalia, which contributed to the political stabilization of Europe. The notion of the nation-state was tentatively exported to different continents of our planet with mitigated success. Governments have been recognized as legitimate representatives of nations and morally responsible for their internal security and welfare, and as the interlocutors in foreign affairs.

But the globalization of markets, with a rhetoric anchored in liberalization, deregulation and privatization, provoked national governments to recede progressively from the economic sphere. This recession motivated the surge in the national political spheres, of new actors (at a distance) with considerable (economic and political) power. Who governs now? Where are important decisions being taken? Who is accountable? Have we voted for them? Governance is now a popular word, pervading all fields of activity in advanced countries. No wonder people and institutions feel insecure.

The decline of strong values such as those of nature, science, universality and sovereignty has unfolded mixed senses of anguish, short-termism, oppression and insecurity. Tomorrow will be worse than today. And the markets make sure that today is the day. To consume immediately is the only certainty that is allowed. Marketing propaganda forces us to make instant decisions. The preeminence of financial capital—due to its intangibility and therefore infinite possibility of accumulation—accelerated this trend to a point of no return. The final

act has been the (self-) separation of finance from the economy, in the vain attempt of gaining full control over the accumulation processes. In trying to fly too high and unattended, finance lets its wings melt down. And the result has been the spiraling down of the assumptions regarding the future knowledge economy into a deep crisis that may unfold a new order. But whose? For the first time in centuries (except during the period of wars), we do not see the light at the end of the tunnel. We have become afraid of the future. This means, finally, that capitalism has killed modernity. For what purpose, we do not yet know: we can only recognize this as a tragic Oedipian moment of Western cultural evolution. Our states, heirs of the medieval tradition of divine power and omnipotence, no longer own the future. They are turning their eyes and actions away from it, concentrating on immediate solutions. The future has been privatized too. We are trapped.

"The way forward is therefore clear. We have to invent a new future."

3. Trapped?

The U.S. is drifting further away from Europe. The Internet has freed the Americans from their European birth complex. Will the U.S. be able to maintain its hegemonic status in the 21st century by forging new networks? Will the global 21st century look similar to the 18th century multipolar Europe? Nobody knows.

The Europe of Christendom was doomed by its local nature, for being unable to open up to new arrangements. It closed down. The way forward is therefore clear. We have to invent a new future.

We will have to nurture curiosity over and over again. And we will have to borrow from António Vieira his extraordinary vision—as valid and effective today as it was three hundred years ago, when he brightly stated that "to assess hope we have to measure the future".

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Quest for a New Paradigm in Economics
A Synthesis of Views of the New Economics Working Group*

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Abstract

The remarkable economic achievements of the past two centuries have cast an illusion of omniscience on the discipline of Economics, which even repeated catastrophic policy failures have still not entirely banished. The gap and disjuncture between prevailing economic wisdom and its effective application to promote human welfare and well-being are enormous and widening rapidly. The gap between current economic performance and the economic potential of global society has never been greater. Both have been aggravated by the rapid evolution of economy and society in recent decades. An ideology masquerading as scientific theory, mainstream theory fails to provide the necessary insights to guide us through the next phase of global social evolution. This paper summarizes major conclusions from a series of meetings organized by the World Academy of Art & Science over the past half-decade. It examines important premises and principles of a transdisciplinary framework for ecologically-sustainable, human-centered development founded on knowledge of the underlying social processes that govern human accomplishment and social evolution. It challenges the implicit values and assumptions on which current theory and practice are based. It exposes the central role played by social power in determining the operations of economy and the distribution of benefits in society. It seeks to construct a holistic paradigm to reunite and integrate thinking about economy with the political, legal, social, organizational, ecological and psychological dimensions of which economy has always been an inseparable part. It points to the need for a transnational theoretical framework as a unit of analysis and emphasizes a global perspective, which aims to maximize the well-being of humanity

* See detailed acknowledgement of group member contributions at the end of the paper prior to the endnotes.

as a whole. In recent times, growing awareness of the limitations of the present economic system and the real planetary boundaries and ecological constraints on unlimited growth has overshadowed exploration of the equally real social potential that lies unutilized due to limitations in current theory and policy. The central aim of the paper is to develop insights that will lead to formulation of a new paradigm of economics, which will generate effective public policies and solutions to existing crises; revolutionize textbooks and teaching of the discipline of Economics around the globe; unleash societal potential for meaningful transformations to benefit the welfare and well-being of all humanity; and safeguard the planetary environment for future generations.

1. Signals for Change

Humanity is confronted with multi-dimensional challenges of unparalleled scope, magnitude and complexity. They are global in extent and inextricably interconnected. They fail to respond to partial, piecemeal, sectoral solutions and uncoordinated national level initiatives. They ruthlessly expose the inadequacy of prevailing policies, institutions and social theory. These challenges encompass political, legal, technological, social, cultural and ecological issues, but economy lies at the heart of the matter. In recent decades, economy has supplanted war and politics as the primary field and engine for global social evolution.

The dismal science was founded during an age in which food, goods, money and information were scarce. Today we live in a world characterized by surplus global production capacity, unprecedented access to information, zero marginal cost products and services, the proliferation of complex and increasingly integrated networks operating at lightning speed, rapid growth of a sharing economy and collaborative production. These fundamental changes challenge many of the assumptions that underpin mainstream Economics. At the same time, we live in an age of increasingly unstable financial markets, huge corporate cash hoards, burgeoning capital surpluses playing the global casino for higher speculative returns, declining investment on Main Street, stagnant wages and a declining share of labor in national income in spite of rising labor productivity, rising levels of inequality, massive investments in automation and robotics aggravating already high levels of youth and chronic unemployment, fewer startups and IPOs, increasing concentration of global economic and financial power spurred by peak numbers of mergers and acquisitions and network effects, a huge boost in share buybacks generating windfall profits to investors and executives instead of investment in R&D, too-big-to-fail financial institutions thriving on moral hazard, massive offshore corporate tax evasion, and increasing power of money in politics.[*,†,‡] In addition, sustainability, efficient allocation and fair distribution are being seriously challenged by ecological limits with regard to freshwater, deforestation, land system change and climate

[*] Rana Faroohar reports that the number of new firms as a share of all businesses in USA shrank by 44% between 1978 and 2012 and six of the 10 biggest individual political donors in 2016 were hedge-fund barons. "American Capitalism's Great Crisis," *Time*, Mar. 12, 2016.

[†] Roc Armenter reports that the share of labor in US national income remained remarkably steady at 62% for almost 50 years before declining sharply in the new millennium. "A Bit of a Miracle No More: The Decline of the Labor Share", *Federal Reserve Bank of Philadelphia Research Department*, 3rd quarter 2015, 1.

[‡] According to ILO and OECD, between 1990 and 2014, 26 or 30 advanced countries reported a declining share of labor in national income ranging from about 6% in UK to over 10% in USA and more than 14% in Spain. Similar declines were reported in emerging countries including Turkey, South Africa and Mexico. ILO and OECD, "The Labour Share in G20 Economies", Feb. 15, 6.

change.[1] These positive and negative symptoms are both indicative of an economic system that has outgrown its intellectual foundations. They compel us to distinguish between positive and negative forms of development and to recognize that it is at least as important to discourage its negative expressions as it is to foster the positive.

Economics is in the midst of an identity crisis. Classical concepts and models no longer provide sufficient insight and guidance for navigating the complex nexus of forces evolving with ever increasing rapidity. Globalization has extended the boundaries of production, marketing, financial institutions and employment beyond effective reach, regulation and control by individual nation-states. The lightning speed of technological and social innovation has far outpaced the adaptive capacity of national level institutions, legislation and social attitudes. Existing economic theory struggles unsuccessfully to explain these developments and prescribe effective remedies within the existing conceptual system. Future economic prospects are characterized by increasing levels of volatility, instability and uncertainty. Public policy debate is marred by rising levels of doubt, confusion, pessimism, polarization, reactivity and extremism. The recent Stockholm Statement by thirteen eminent economists on principles of policymaking reflects the growing recognition that prevailing theory and policies are inadequate.[2]

Economics is no longer merely a battlefield for perpetual skirmishing between different social philosophies. It has become a field of confrontation between the past and the future. The stakes are too high and too urgent to be left to unstructured, leisurely academic debate or pious populist pronouncements. These symptoms point to the need for a fundamental, comprehensive reexamination of economic and social thought. They present a compelling call to transcend the limitations of existing knowledge and the prevailing conceptual systems in which it resides. They prompt us to seek a more inclusive and integrated framework within which current ideas complement and complete rather than compete with one another.

The reputation of Economics has benefited enormously from humanity's astounding economic progress over the past two centuries. Since 1800, real per capita living standards have multiplied approximately 12-fold in spite of a more than 7-fold growth in the world's population. That reflects an 84-fold growth of real world GDP in 200 years. By any standards, the progress has been phenomenal. Why, then, tamper with success? One obvious answer is that the rise in living standards for the vast majority of OECD countries has slowed dramatically in recent years and is no longer responding to conventional economic policy measures. Moreover, the major benefits of growth are accruing to an increasingly narrow portion of the population at the top. But a greater truth is that humanity's remarkable performance has been due to a great many factors outside the boundaries of conventional economic theory which have received inadequate recognition and attention. The 84-fold growth of GDP has been the result of the spread of democracy, unprecedented freedom of action, and soaring levels of education, which have combined to dramatically increase the aspirations, knowledge, skills, creativity and innovation of the workforce. It has been the product of massive advances in science and technology in fields such as transportation, communication, energy, mechanization, computation, and automation. Though less often recognized, it has equally been the consequence of strides in the technology of social organization, giving rise to countless new

types of institutions, systems and modes of interaction from the mail order catalog to e-commerce, from just-in-time inventory to global supply chain management, from franchising to outsourcing, from TV networks to social networks, and so on. And more significant than any of these, it has been the result of radical advances in human rights, dignity, freedom of thought, and social equality that have liberated human aspirations, energies and creativity from the shackles of all forms of discrimination, exploitation, injustice, slavery, apartheid, oppression, and persecution.

Greater understanding of the workings of economic systems has no doubt been a contributing factor, but one whose impact would have been severely limited were it not for these wider evolutionary changes. Today, the inadequacy of existing concepts acts more as a constraint than a catalyst because it focuses too narrowly on conventional economic instruments while neglecting the far more powerful social forces available for global progress. One of the aims of new economic and social theory must be to make conscious and explicit the full range of the forces that have supported the evolution of the global economy up to now and the full spectrum of policy instruments available to promote future progress. Moreover, it must seek to discover the creative social process by which these forces express themselves, the determinants that focus and direct their energies, the means by which these forces are channeled and transformed into power, and expressed through skilled execution of work.

Today Economics consists of a patchwork of premises, concepts, theories, models, measures and tools tenuously classified into several broad theoretical systems and grouped together—as opposed to truly integrated and unified—into myriad disciplines, schools, sub-disciplines and sub-schools. Many of the premises are based on acute observations of specific phenomena at least partially true at times in the past under certain circumstances and conditions, while others are theoretical postulates valid only under ideal conditions, largely non-existent in the real world. Many of the models are useful, though oversimplified, generalizations from specific events, often mistaken for reality itself. Many of the tools are useful for specific types of analysis. Some of the measures provide real insight into specific types of events, but lose much of their significance when aggregated or applied over extended periods of time. The superabundance of information available drowns serious theoretical debate in a sea of data and minute piecemeal analysis.[3] No matter how high-sounding, insightful or useful, they do not, all or in part, constitute an adequately coherent, cohesive, integrated framework of knowledge to understand, navigate and maximize human welfare and well-being during the complex, rapidly changing times in which we live. No matter how great the service they have provided along the way, there is an urgent need to move beyond.

New paradigms do not reject or invalidate existing truth. They place it in a wider context, as Relativity Theory and Quantum Mechanics established the boundaries within which the laws of Newtonian Physics remain fully valid. They revealed that the principles applicable to everyday phenomena on earth were insufficient to understand reality on a cosmic scale at velocities approaching the speed of light or at the infinitesimal scale of subatomic particles which constitute the foundation for the material world. Expanding the inquiry revealed unimagined physical powers and creative capabilities, which form the basis for recent advances in computing, biotechnology, lasers, nanotechnology and countless other fields. A potential

of even greater practical relevance to humanity awaits the development of new economic and social theory. Historically, such developments have tended to emerge out of obscurity on the periphery of prevailing thought, rather than by a reformulation at its intellectual center, due to the natural defensiveness of entrenched ideas. What is needed is not an all-out war to the finish between partial truths, but a new synthesis founded on a wider and deeper understanding of the principles, forces and processes governing social evolution.

1.1. Evolution of Economy

Intellectual paradigm shifts of this magnitude have occurred innumerable times in different fields of science. There are manifold signs that the time has come for another. The nature of economy has changed dramatically since the 18th century. Physiocrats pronounced agriculture as the true source of wealth and mercantilist policies enriched merchants and princes at the expense of the general public. Since then the concept of property has evolved from land and other types of material assets to include intangible technological, commercial and intellectual forms. The concept of capital has evolved to reflect the central role of individual and social relationships, capacities, organization, resourcefulness, creativity and innovation. The nature of economic goods and services and the relative contribution of agriculture, manufacturing and services have been radically altered. The non-material is no longer immaterial in economics. Information, intellectual property, social attitudes, public trust, brand loyalty, connectivity, organizational know-how, networks, human energy, vision and values have become powerful economic determinants. Values are a primary determinant of value in the 21st century.

The emergence of the knowledge-based service economy founded on a borderless communication and transportation network has transformed economy from relatively isolated and independent centers of mining, manufacturing, distribution and consumption into an increasingly interconnected, interdependent and unified global organization. The shift to services now pervades even agricultural and manufacturing activities and enterprises, where research, design, logistics, marketing and after-sales service have become the largest fields of employment. The enormous fixed capital investments involved in service delivery in transportation, communications, education and healthcare undermine the utility of conventional marginal cost economics. The marginal cost of an additional telecom customer, e-book reader, airline passenger, university student or hospital in-patient is approaching zero. The prolonged extension of utilization time from point of sale back five or ten years to the point of initial investments in basic research and forward many years to the point of final disposal and expiration of warranties makes the time dimension of product and service delivery an increasingly critical determinant of economic value.[4]

Economics can no longer afford to assume a positive relationship between economic activity, human welfare and well-being. The negative personal, social and ecological consequences of much of what we call growth increasingly offset its positive contribution. The boundaries between the monetarized and non-monetarized sectors of the economy are continuously changing, with significant impact on human welfare and well-being. Conventional economics measures a double income gain when a housewife takes a paid job

requiring a two-hour daily commute and hires another person to take care of the family and household, but it does not take into account the decline in quality of life, health, nutrition and well-being for the individual or the family or the environmental cost of two additional commuters in terms of higher fuel consumption and air pollution.

> *"A science of human welfare cannot legitimately hide behind claims of value-free, objective scientific neutrality."*

There is abounding evidence to show that the challenges and existential threats posed by ecological imbalances cannot be effectively managed by market mechanisms. The extraction cost and market price of raw materials are not reliable indices of their real value to present and future generations. Remedial responses to the impact of deteriorating air, soil and water quality are reflected in GDP as positive economic activity, when they actually result from degradation of natural capital and growing threats to human well-being. The global bottled water industry grew from $60 billion a decade earlier to nearly $170 billion by 2013 and it is expected to reach $280 billion by 2020.[5] But the gain in GDP is primarily due to a rising concern regarding the deterioration in water quality, hygiene and safety, rather than any real improvement in standards of living.

All these factors have influenced the development of economic thought in the 20th century, but almost exclusively within the framework of premises and boundaries established by conventional mainstream economic theory which are no longer sufficient to address the challenges and the opportunities of the 21st century.

1.2. Evolution of Society

Changes within the field of economy only partially reflect the wider evolutionary processes impacting on all fields of social life and their relationships and interdependencies with one another. Never before has the world been so intimately interconnected. Never before have the different sectors and aspects of social existence been so tightly integrated. It is somewhat startling to reflect that prior to the publication of *Limits to Growth* by the Club of Rome in 1972, economy and ecology were commonly perceived as independent spheres of existence subject to separate and largely unrelated forces. Climate change, politically instigated migration and rapid advances in robotics and artificial intelligence have radically and irrevocably demolished the naïve notion that political, legal, economic, social, cultural and ecological reality, theory and policy can be isolated and insulated from one another. In a world operating at the speed of light and evolving with astounding rapidity, static equilibrium models of reality packed in airtight containers are increasingly suspect.

The need for a new paradigm in Economics is only the most visible sign of a broader need for a radical reformulation of social science and the wider knowledge industry in general. Without a new paradigm in knowledge we cannot have a new paradigm in society.[6] Long after the natural sciences began to transcend the limitations of compartmentalized,

materialistic, mechanistic and reductionist modes of thinking, the social sciences have remained fragmented, isolated and largely independent of one another. In the absence of a comprehensive conceptual framework for the study of the individual and society, they operate based on different sets of assumptions, principles, social processes and human characteristics. A century after Physics evolved new paradigmatic thinking to reconcile Newtonian theory with the discoveries of Relativity and Quantum Mechanics, the social sciences remain grounded in static, fragmented, mechanistic Newtonian thinking. This is not surprising given the astounding complexity of human processes, which dwarf in magnitude the relative simplicity of purely physical and biological processes. They have developed in response to the growing recognition of the interrelatedness of all social phenomena and have had significant impact on the construction of economic models and projections. But, thus far, their impact on the foundations of mainstream Economic theory has been limited.

1.3. Modern Paradoxes

Other factors compel us to examine the need for a radical departure from conventional mainstream economic theory. We are confronted with a perplexing and disconcerting paradox of unmet needs and unutilized opportunities. We live in a world in which unprecedented abundance lives side by side with persistent and unmitigated poverty. Billions of people continue to live at subsistence levels, while global financial assets have multiplied twenty-fold, from $12 trillion in 1980 to upwards of $250 trillion in 2015, equivalent to nearly four times global GDP. Of this, a mere 15% goes to support the real economy and job creation.[7] The world possesses sufficient surplus capacity to produce every variety of goods to meet the needs of every human being on earth, yet billions lack the purchasing power to acquire them. Hundreds of millions of able-bodied, willing workers are without employment opportunities and more than a billion are underemployed, while urgent human needs remain unfulfilled for more and better food, clothing, housing, education, healthcare, communications, transportation, and other essentials of life. The most advanced technologies coexist alongside the most primitive living conditions. There is something perverse about a system with so much power and such visible incapacity to meet human needs. These apparent failures are sufficient confirmation that a better system must be possible and that the world urgently needs new thinking to make the new paradigm a reality.[8] There is the added irony that the world is spending nearly $1.7 trillion annually on military expenditure—25% more in constant dollars than the Cold War peak—rather than channeling even a fraction of this amount to remedy the economic root causes of violence and terrorism.

Economics is perplexed by a second paradox. At a time of unparalleled real-world interconnectivity, independence and integration, economic thought and policy in different fields have become increasingly fragmented and divorced. Financial markets, which originally evolved to pool capital for investment in the real economy of trade and industrial development, have become increasingly divorced from the real economy, a world unto themselves, an activity spinning its wheels without producing or providing goods or services that meet real world human needs, while generating turbulence and uncertainty that undermine the stability of the real economy and the security, welfare and well-being of countless human beings. Economic theory has become increasingly divorced from empirical

fact and common sense. Speculation masquerades as wealth creation, when in fact it destroys much more than it creates. Over $12 trillion in funds are tied up in unproductive national forex reserves as insurance against speculative raids on national currencies.[9] Investment banks channel trillions more into speculative investment in commodities with depositors' funds, while enjoying preferential domestic tax rates and offshore tax havens for their profiteering. The Tax Justice Network has estimated that between $20 and $30 trillion are presently held in "offshore" tax havens—thus not available for taxation to generate the much-needed revenue for public investment and global public goods. "Just taxation" on global scale is thus a central problem that needs to be addressed. The "fiscal crisis of the state" is a symptom and a consequence of this global scale of vast concentration of wealth outside the tax system. A new paradigm is needed that transcends the fundamental dichotomies that have characterized traditional or mainstream Economics by the separation of economy from politics, society and nature.

"A true science of economy must be founded on an integrated science of society."

So too, the development and application of technology, which originally evolved to enhance the productivity, comfort and convenience of human beings, have become increasingly an aim and end in themselves, proliferating without consideration for their impact on human beings. The preference for technology over labor is not always beneficial, even in narrow economic terms. The wholesale rush toward mechanization and automation is thrown into overdrive by a policy bias toward capital and technology-intensive investments over investments in human capital, welfare and well-being. Economics has developed innumerable tools and measures to aid and assess the impact of technology investment decisions, but it refuses to come to terms with their enormous social consequences. Sensitive to the bogey of communism even a quarter century after the collapse of the Soviet system, economists persist in dealing with the economics of production and the economics of consumption as independent of one another. Additional expenditure on automation does not necessarily promote greater human welfare, unless it is accompanied by appropriate policies to ensure the distribution of benefits to the wider population. A science of human welfare cannot legitimately hide behind claims of value-free, objective scientific neutrality. Technological advances are the result of the cumulative progress of humanity over centuries and the benefits must necessarily accrue to the society at large. A science that refuses to take a position on this seminal issue lacks integrity, credibility and humanity.

A similar divorce pervades the relationship between economy and ecology, where life-supporting air and water have been reduced to tradeable economic goods and the impact of pollution on human health and quality of life has been reduced to unavoidable collateral damage in the war between unbridled, conspicuous consumption and sustainable well-being. Based on prevailing theory, we are called upon to entrust the fate of future generations and the planet we live on to the blind wisdom of a marketplace, whose very rules and functioning are framed to preserve and enhance the concentration of advantage among powerful vested interests.

And finally, there is the grand divorce between economy and society, an intellectual delusion masquerading as legitimate scientific theory. Classical economics views economy as a closed system. This viewpoint enabled economists to develop theories and models that ignore the impact of factors that have not been classified as strictly economic. This approach is no longer useful or tenable given the increasing complexity, integration and rapid transformation of social existence. The US subprime mortgage crisis and resulting global financial crisis have impacted every field of social life around the world. Economy is a subset of society, just as finance is a subsystem of economy. Their only rationale and claim to legitimacy are based on the service they provide to the wider society of which they are a part. Money and markets are instruments for social progress. *Economy exists to serve, not to dictate or dominate humanity.* Economic rules are man-made and intended to promote the stability, security, welfare and well-being of all human beings. All wealth is a social creation and has social consequences.

The notion of economy as separate from politics, administration and law is illusory. The perennial public debate over the role of government in regulating markets is misplaced. Markets depend for their effective functioning on an infrastructure of law to protect property and contract rights, a judicial system to enforce those rights, public institutions to prevent collusion and control monopoly. Property is a legal concept defined and enforced by law and government. Before property, there was only physical possession backed by force. Without law and government, exchange is reduced to the law of the jungle. Primitive forms of money may have preceded government-issued varieties of coin and currency, but the money we utilize today is founded on the productivity, strength, stability and integrity of the entire global political-legal-economic system.

A new paradigm in economic thinking must be founded on a broader, more inclusive perspective. Economy does not exist separate from the social aspirations, cultural values and psychological expectations of human beings. The real source, foundation and determinant of economic activity is the society as a whole. Economic capacity is founded on and determined by political, legal, organizational, educational, social, psychological, cultural and ecological factors and can only be understood when viewed from this wider perspective. Just as human health depends on the functioning of every organ, tissue and system in the body, economic systems depend on the functioning of the society as a whole. Prevailing economic theory, like much of modern medicine, cuts up reality into tiny specialized areas and attempts to deal with them piecemeal. In Medicine, it frequently leads to side effects of treatment more serious than the disease being treated. In Economics it can lead to unintended consequences of enormous magnitude for global society.

Reality is multidimensional and integrated. To be effective, knowledge of that reality must be too. It is always shaped by a multitude of aspects, perspectives, and forces. *Economy, politics, society, and culture are inseparable dimensions of a single integrated reality.* The tendency to condense and compress reality into simplistic formulas is a form of willful ignorance that facilitates quantification, calculation and multiple choice examinations. In the process it conditions the mind to a reductionist mode of thinking blind to the complexity and integral nature of life.

Under the reigning economics paradigm, economy is regarded as being "disembedded" from society, whereas it should be regarded as being an integral and inseparable component of society, which does not and cannot exist outside of a social context. The economy exists to serve the needs of society; society does not exist to serve the needs of the economy as master over society and individuals. A new paradigm in economic thinking needs to be founded on this wider view of the social whole. A true science of economy must be founded on an integrated science of society. Development of a real science of economy will only be possible when economics is viewed as a subset and integral aspect of the larger society of which it is a part.

1.4. Social Potential and Effective Power

The world is beset with problems that appear insoluble largely because we are unconscious of the true extent of the social capacity that has been created and the social potential still waiting to be developed. The limitations of present theory prevent us from seeing the incredible power society has generated for accomplishment in all fields. A new paradigm in thought can provide the intellectual foundations for achieving a fuller and richer social life for humanity than anything now imaginable, if only we are willing to discard the self-imposed limitations of outmoded conceptions, vested interests and dead conventions.[10]

Economics was founded as the dismal science at a time of scarcity. Its mentality and underlying assumptions are still powerfully influenced by social conditions of that period. In spite of the remarkable achievements of the past two centuries, the idea that society has the power to meet the material and social needs of all its citizens has not displaced the earlier idea of scarcity. We still tend to think of economy largely as a win-lose, zero sum game. If the magnitude of the untapped social potential were more widely recognized, then the public would clamor for and demand a better system far more vehemently than it does today. Prevailing economic thought is founded on the Newtonian misconception that economy is a closed physical system consisting of finite resources and limited potential. Conservation of energy and momentum may be valid for the movement of inanimate physical objects, but it is insufficient to circumscribe the limits of living systems and conscious human communities.

The historical record refutes a Malthusian view of economy. Malthus was one of the first to perceive the importance of biophysical constraints. Two hundred years ago, he rightly perceived the threat that rapid population growth would overreach the capacity for food supply based on the system of production and the technology prevalent at that time. The awareness generated by his controversial assertions may well have served as a conscious or subconscious impetus for action. His perception of the problem did not take into account the opening up of vast areas of land in the New World, the application of steam power in agriculture, the adoption of farm machinery to raise land productivity, the spread of irrigation systems, advances in soil agronomy, crop genetics, agricultural research, farmer education and extension services, post-harvest technology and innumerable other innovations. Since then the world's population has multiplied more than seven-fold, but per capita availability and consumption of food have grown even faster. Malthus was not mistaken about the importance of environmental constraints, but he lacked

a wider understanding of the complex factors governing the interaction and interdependence between the human and physical ecologies. The supply of many of the earth's physical resources is limited, but the capacity for improving productivity and effective utilization of those resources through application of knowledge, technology and organization is not. Material substances are limited, but human resourcefulness is not.

> *"It is no longer acceptable for economics to ignore the issue of social power which underlies the entire workings of the economic system."*

Our very conception of what constitutes a resource depends on the application of human intelligence, knowledge and resourcefulness. Human consciousness is the ultimate resource, though it is poorly utilized in its present fragmented state. It is human consciousness that recognizes and adopts material substance and energy for productive purposes. Thus, the second-most common element in the Earth's crust, silicon, was once regarded only as raw material for brick- and glass-making. A few millennia later it became the foundation for semiconductors and fiber optics. Now it is key to building renewable energy infrastructures. Mindless growth fueled by wasteful consumption of material resources already poses existential threats to society and certainly has its limits, but improvements in human welfare and well-being do not. Social progress founded on the continuous development and application of human consciousness and capacity shifts the paradigm from limits to economic growth to unlimited development of human welfare and well-being.

At the same time, it is essential to recognize that the conventional conception in Economics that "value" exists only in relation to human utility is deeply problematic. Human awareness and perception may be needed in order for humanity to consciously harness the powers of nature, but the value of nature can never be adequately captured by the limited perspective of human understanding at any point in time. A new perspective is needed which recognizes that much of what exists and occurs within the biosphere has intrinsic "value" regardless of human intervention or activity. To damage and destroy the biospheric systems and life within them is to destroy the most fundamental source of "value" underpinning human existence.

The physical world and material resources constitute the physical foundation for economy, but new economic value creation in the 21st century is very largely driven by non-material resources—knowledge, information, technology, skill, social energy and social organization—that are not subject to finite limitations. Education, healthcare, financial services, retailing, tourism, transportation and communication and other major components of the tertiary sector now represent 74% of economic activity in OECD countries and 68.5% worldwide.* Even in manufacturing, services such as R&D, accounting, HRD, sales, marketing, product service and disposal often represent more than 50% of the total. Material resources and energy certainly constitute essential inputs for the service sector as they do for others, but

* World Bank database, http://data.worldbank.org/indicator/NV.SRV.TETC.ZS

continuous economic advancement is not strictly or proportionately limited in the manner that Newton's principle of conservation limits the performance of closed physical systems.

The application of mainstream economic theory and policy taps only a small portion of the productive potential of society. Psychologists have found that the average human being utilizes only a small portion of his or her intellectual capacity. More and better education increases the effective utilization of mental capacity. At the same time it broadens mental horizons, raises expectations and fosters creative initiative. It develops and increases the effective utilization of psychological capacity as well. Similarly, new economic thinking has the potential to vastly enhance the security, welfare and well-being generated by economic activity. Any economic system can be enhanced by improving access to affordable, quality education, opportunities for employment, a conducive environment for entrepreneurship, a transparent and fair legal system, access to information and credit, a level playing field in the market, unbiased public policies, equitable income distribution, appropriate pricing and taxation of natural resources and pollution, protection for the global commons, and a wide range of other social variables. Reducing prosperity to a set of econometric equilibrium formulas blinds us to the vast untapped social potential. Can anyone seriously doubt that redirecting the world's 250 trillion plus financial resources from speculative to productive purposes could vastly enhance human welfare in an environmentally sustainable manner? According to recent projections, the world needs to invest about $5–7 trillion per year in sustainable technologies and infrastructure facilities. That is less than the annual reinvestment by the world's largest pension and insurance companies. What better way could these firms invest their resources to reduce uncertainty and ensure security for their shareholders?

Society is an immeasurable reservoir of social potential enriched by developed and undeveloped human endowments and organizational capabilities. Wealth creation, welfare and well-being are a function of human relationships. The greater the development of the individual and the greater the ease, speed, accessibility and facility of coordinated, cooperative harmonious relationships between people and organizations, the greater the productivity, prosperity and cultural enrichment of society as a whole.

Social energy determines the potential, but that potential is rarely approached, except perhaps in times of extreme crisis or highest idealism and solidarity, characteristic of the greatest moments of history. Under normal conditions, society harnesses only a small portion of its energies for productive purposes. Social power is the capacity of the society to direct, organize and utilize that energy for effective action by means of laws, social systems, institutions, knowledge and skills to accomplish social objectives. The wartime mobilization of production gives an indication of how large is the gap between normal social performance and the social potential.

Nor is human and social potential limited to these few factors. Anything that increases the aspiration, freedom, dignity, self-respect, self-confidence, knowledge, skills, values, independent thinking, creativity, innovation and dynamism of the individual is a potential catalyst for greater wealth creation. Anything that fosters greater contact, relationship, trust, confidence, equality, organization and innovation within and between communities is a potential

catalyst for greater wealth creation. At a time when 'buyer beware' was the dominant motto in business, more than a century ago Sears introduced its famed 'satisfaction guaranteed or your money back' as a means to win the trust of suspicious rural mail order customers. Within a decade it grew to become the largest retailer in the world, a position it retained for more than seven decades. Amazon is repeating that feat today by creating a global system that maximizes transparency, choice and confidence.

"The objective of New Economic Theory (NET) is to formulate theoretical and practical knowledge required to maximize economic security, human welfare and individual well-being of all humanity in a manner consistent with universal human rights, cultural diversity and civilizational values."

Today global society possesses unprecedented and ever-expanding power in innumerable forms. But the results generated by that power depend on the actual way in which that power is exercised and distributed in society. The wider the distribution of power, the greater the total power generated and the greater the overall social benefits. Monarchs and autocrats possess greater individual authority than elected officers in modern democracies, but the overall power for accomplishment of the societies they govern is severely limited, because they harness only a miniscule portion of the energy and initiative from their members. Democracy distributes political power widely, so the power of any individual is limited, but the total capacity of the society is very much greater. The same principle applies to the concentration and distribution of economic power. *Extreme concentration of wealth, whether by legal or illegal means, imparts enormous power to a few individuals, but substantially abridges the overall power of the society.*

It is no longer acceptable for economics to ignore the issue of social power which underlies the entire workings of the economic system. Until recently the distribution of power has been regarded by most economists as an issue for study by political scientists and sociologists. The exclusion of power from economic discourse was largely the effort of positivists to insulate mainstream economic thought from contamination by Marxist analysis. This was achieved by strengthening the intellectual boundaries between economics as understood in the capitalistic world and distancing economic analysis from the influence of power processes. Popper's trenchant attack on the non-scientific nature of Marxist thought further aided the narrowing of economics to meet the requirements of scientific rigor. The recent work of economists such as Thomas Piketty on economic inequality, growing awareness of the inextricable relationship between politics and economics, highly visible attention to the influence of money and corporations on elections and public procurement, the legal and political basis for the expanding definition of intellectual property rights, and the impact of regulatory capture on public policy and markets in fields such as finance, energy and pharmaceuticals necessitates restoring the issue of social power to a central place in economic theory.

1.5. Restoring the Subjective Dimension

Modern economies are conscious living systems increasingly fueled by human and social resources that are not subject to inherent material limits. Material resources are consumed in the process of utilization. Non-material resources such as information, knowledge, technology, skill and organization multiply in the very process of being utilized. Human capital and social capital grow in quality, utility and value through usage and experience.

Imitating the 19th century preoccupation of the natural sciences with the objective study of external reality, Economics tends to neglect the subjective dimension of reality which plays such a central role in human life. During the 20th century physicists and biologists largely abandoned this view, but it still remains the guiding philosophy of Economics even today. The argument that subjective factors are too difficult to measure is increasingly challenged by the development of alternative measures and justifies much more serious efforts by mainstream economists to evolve new methods, rather than ignore this essential dimension of reality.

New paradigm thinking in the social sciences can no longer deny the central importance of the subjective dimension of reality nor seek to reduce it to its chemical and nervous physiological constituents. Every great leader knows the enormous importance of subjective factors in human accomplishment, which Tolstoy referred to as the intangible but very powerful 'spirit of the army'. Every great political leader knows that the faith, confidence and determination of a nation's people are a more powerful force for victory than a huge army and modern weaponry, as Washington, Napoleon, Churchill and Gandhi demonstrated by their astonishing achievements against impossible military odds. Every great business leader knows that aspiration, confidence and determination are more important determinants of business success than a company's balance sheet, as Lee Iacocca demonstrated so dramatically by bringing back Chrysler from the brink of bankruptcy in the early 1980s. Every thoughtful student of economics knows the same thing, as US President Roosevelt demonstrated in 1933 when he stopped America's greatest banking crisis by appealing to the American people to redeposit their hard-earned life savings to save a fast-failing financial system.[11] The rapid rise of East Asia after the Second World War, Japan's failure to recover peak economic performance after the asset bubble burst in 1988, and Korea's rapid recovery after the 1998 East Asian Crisis are only explicable when subjective factors of national aspiration are taken into account. Economic theory that does not fully recognize and reflect the central role of subjective factors in economic performance is a relic of 18th century materialistic, mechanistic thinking in an age when the human being is the single most important driver of a more equitable and sustainable future.

1.6. Value-Based Science

The natural and social sciences differ in another significant respect. The quest of natural science is to discover the immutable natural laws governing the world around us. The role of the natural scientist is as impartial, objective observer free from value judgements. In contrast, the notion of immutable Newtonian laws of nature has no place in the social sciences.

The social sciences study the world and behavior of conscious human beings, whose habits and propensities are goal-oriented and at least partially subject to conscious choice. They change over time, undergo voluntary modification and conscious evolution. And yet, the most tenacious commitment to this idea today persists in the social sciences.

All scientific inquiry begins with a study of phenomena as they exist to understand their characteristics, structures and the processes by which they function. Yet this quest is informed by the values, mindsets and contexts of the scientists themselves—from their gender, to race, educational background and location in the world. A fundamental challenge in the social sciences is to discover the social processes by which people meet needs, fulfill aspirations and achieve goals. Impartial knowledge of what pertains is not sufficient. It must necessarily be examined in the light of the values and goals humanity seeks to realize.

Of all the social sciences, Economics has been most strongly influenced by the philosophy of positivism and the influence of Hume, who insisted that science would not retain its credibility if it confused the study of phenomena as they are with the study of what we think they should become. Hume's distinction was powerful: if economics were contaminated with the discourse on values, it could not qualify as science. In order to strengthen the scientific boundaries of the discipline, economics became partly an empirical science and partly a logical science influenced by applied mathematics. In doing so, it was compelled to adopt overly simplified and, in some cases, mythical assumptions and generalizations that lent themselves to quantitative analysis. Over time the distinction between premises and reality has become increasingly obscure, resulting in the illusion that the models actually represent the real world, an error akin to assuming that in vitro laboratory experiments on chemicals and microorganisms are a reliable proxy for human clinical trials in pharmacology.

Philosopher of science Karl Popper cautioned against *misguided naturalism* in the social sciences. He argued that practical impact, not just theoretical understanding, must be considered primary in the social sciences. He emphasized the ethical dimension of social sciences—and called on scientists to accept moral responsibility for social outcomes. It is noteworthy that Adam Smith regarded himself as a moral philosopher, not an economist. Smith was looking for ways to enhance human welfare, not seeking to formulate universal laws of economy true for all nations, all times and all people. While many social scientists have heeded Popper's caution, mainstream economic thinking still attempts to position itself as objective, value-free science while its basic premises are founded on implicit values which are rarely discussed.[12]

Economics needs to become value-conscious. It needs to make explicit the goals, values and premises on which its knowledge is based. The objective of New Economic Theory (NET) is to formulate theoretical and practical knowledge required to maximize economic security, human welfare and individual well-being of all humanity in a manner consistent with universal human rights, cultural diversity and civilizational values and what it will mean to live in harmony with nature. Economic security ensures minimum material needs. Human welfare encompasses a wider range of material and social needs related to safety, health, education, social security. Individual well-being encompasses higher level social,

cultural, psychological and spiritual aspirations for freedom of choice, respect, free association, enjoyment, creative self-expression, individual development and self-realization. And sustainability means achieving this in ways that restore the natural systems on which we depend. The objective of economics is not production for its own sake or economic growth for growth's sake. The goal is not to discover immutable, universal, natural laws of economy based on any existing precedent, model or theory, but to identify the laws and first principles of a social system suitable for promoting global human welfare and well-being.

2. Limitations of Mainstream Economics

The objective of this paper is not a critique of mainstream economic thinking but rather a call to evolve new theory that transcends its limitations. There have been innumerable critiques in recent years identifying the limitations, errors, omissions, flawed logic, inconsistencies and contradictions in prevailing mainstream economic theory.[13] Useful modifications have also been incorporated reflecting insights from sociology, psychology and ecology, but they do not question the core assumptions of mainstream economics.

The following is a partial summary of major problems, limitations and failures of mainstream economic theory:

- It fails to achieve vital social goals—access to essential needs, full employment, equitable income distribution, economic security and welfare for all, true freedom of choice, social justice, social stability and harmony.
- It regards growth as synonymous with rising levels of human welfare when it may actually be the very opposite.
- In an effort to simulate the scientific rigor founded in the natural sciences, it has adopted theoretical and methodological assumptions and overly simplified generalizations that do not conform to the way economies actually work, resulting in a radical gulf between theory and practice. Highly questionable assumptions and models about the functioning and neutrality of markets, rational choice, marginal costs and benefits, equal access to information, additive individual utility functions and profit-maximization are a few well-known examples.[14,15,16,17] In an open letter to the *New York Times*, Paul Krugman has cautioned against mistaking the beauty of mathematical equations for truth.[18]
- It regards society and the environment as externalities rather than as indispensable agents in every productive process.[19] It operates based on a false accounting system that both omits and misrepresents vital information regarding the social and environmental consequences of economic activity, including the economic and social costs of environmental degradation and the true replacement cost of non-renewable resources.
- It regards economic price as a proxy for the real value of transactions to human beings and human welfare.
- It is a-social in the sense that it ignores the existence of society and social processes, neglects the central role of cooperation and trust, and considers fair and just allocation and distribution as non-economic issues.

- It is based on static equilibrium models that are inadequate to describe and explain recurrent patterns of instability, frequent crisis and rapidly evolving social processes that characterize economic systems.
- It is so fixated on monetary values that the physical world becomes invisible and is neglected. Everything becomes substitutable, absolute scarcities do not exist, and the physical world has no impact on the economy. It is based on the implicit assumption of freely available resources and sinks for material and energy that are in conflict with the existence of biophysical constraints. As a result, it is unable to address the issue of biophysical constraints and reconcile the apparent conflict between economic growth and sustainability.[20]
- It fails to reflect the real impact of transactions on society and on the environment, such as the social costs of unemployment, pollution and climate change.
- It is still modeled on 19th century concepts applicable to local and national economies during the Industrial Revolution, disregarding fundamental changes in the principles governing the modern service economy.
- It is founded on invalid premises regarding the rationality of human decision-making that are in direct contradiction to psychological research and historical evidence.
- It is based on naïve assumptions regarding the relationship between the financial and the real economy which have resulted in a reckless, destabilizing and dangerous expansion of speculative financial markets based on tools aptly described by Warren Buffet as 'weapons of financial mass destruction'.
- It fails to properly account for the role of credit and private debt in the economy.[21]
- It is based on a narrow economic concept of efficiency that ignores the social implications and social costs of profit maximization. The efficiency of firms achieved by replacement of workers with machines is not synonymous with the efficiency of society that is faced with rising levels of unemployment, welfare costs, crime and violence.

2.1. Theoretical Problems

These shortcomings are the result of mental and social constructions, implicit assumptions and values which need to be consciously recognized and subject to examination, e.g. the assumption that pricing of resources at the cost of extraction reflects their real value to society or that extending intellectual property rights promotes social justice. These shortcomings arise as a result of more fundamental theoretical limitations:

- *Disciplinary Reductionism:* Economics shares shortcomings common to other disciplines in the social sciences. They are all the product of the attempt to reconstruct the unity of social life by the mechanical assemblage of independent concepts, factors, forces and components which in reality constitute an inseparable unity. Efforts to isolate and insulate the functioning of economic factors from political, legal, technological, social, psychological, cultural and ecological factors are an artificial

abstraction intended to reduce real-world complexity into terms that lend themselves to mathematical modeling. This disciplinary reductionism destroys essential knowledge and obscures underlying assumptions and premises on which prevalent theories are based. More importantly, it diverts attention and discussion away from critical factors that influence economic outcomes.

- *Mathematics:* In an effort to achieve the characteristics of a mathematical science, it resorts to inappropriate use of mathematics and statistical analysis, requiring that almost all types of economics be based on models and produce mathematical proofs in order to be taken seriously. The effort to reduce the rich variability and complexity of social reality into linear equations and relations, simple calculus and central limit theorems leads to conclusions that are logically coherent but most often widely divergent from the underlying social reality they seek to model. There is not a meaningful mathematical solution for all economic problems. Insistence on mathematical rendering as the default mode of expression distorts the selection of subjects for study, leads to the omission of important qualitative factors, and severely hampers the overall progress in economics.
- *Regulation:* Faith in the wisdom of self-regulated markets is a misapplication of principles from the natural sciences. Markets are not self-regulating mechanisms that optimally utilize all available factors of production to achieve full employment and price stability. Today's youth unemployment levels ranging from 25-50% or more are only one of the most conspicuous exceptions. Unregulated markets are neither free, nor fair, nor socially efficient. Left to themselves they tend toward disequilibrium, which is why institutions matter. Disequilibrium takes the form of recurrent systemic crises and systemic instability, which should be regarded as patterns of central concern for analysis in economic theory.
- *Globalization:* Economic theory founded on the primacy of national level markets and policies is inadequate to comprehend economic functioning in an increasingly interconnected and globalized economy. Thus, employment is still modeled at the national level in an age when international and global influences are of growing importance. For example, a truly global framework would necessarily take into account the net impact on global job creation and environmental pollution of shifting production to locations in other countries. The traditional nation-based perspective of employment fails to take into account the enormous positive impact of global economic growth on job creation, because many of those jobs are created in other countries. Jobless growth is a misnomer. When the impact of domestic growth on total employment is taken into account, the most economically advanced countries are actually running a net negative unemployment that is not immediately apparent, because we focus only on jobs created in the domestic economy. High income countries are net job exporters. These jobs, in turn, spur a rise in incomes, soaring levels of consumer demand and demand for more sophisticated technologies produced elsewhere. Thus, the generation of jobs in other countries is a powerful engine for both continuous expansion of the global economy as well as for continuous global job growth. The phenomenon of job exports helps

explain the remarkable fact that total global employment has more than kept pace with population growth and technological development during the past six decades.[22]

- *Social Power:* The mechanistic view of economic systems as a function of inputs and outputs ignores the immense importance of social factors that determine the exercise of power in society, access to resources and the distribution of economic benefits. One example is how social factors impact on economic outcomes, the extension of copyright and patent rights beyond the level needed to encourage innovation results in higher prices to consumers and higher entry barriers for competitors.
- *Evolution:* Rapid evolution is taking place simultaneously in fields such as science, technology, education, organization, law, governance, public awareness, social aspirations and social power. *Economy and society are continuously evolving*, so that static (non-evolutionary) concepts, theories and models based on the industrial economy are of decreasing relevance and utility in a knowledge-based service economy dominated by the financial sector.
- *Concept of Value:* Market prices are not objective, universal measures of value that lead to an optimal allocation of resources. The market accords equal value to life-saving and life-destroying activities, the essential and the trivial, the legal and the criminal, to $100,000 in food grains and $100,000 for a movie actress' dress. Market-determined wage rates do not reflect workers' productivity or generate an equitable distribution of income. Moreover, current theory regards all monetary values as positive, whereas a great many economic activities either result from or contribute to the generation of negative value-added (deducted value), as in the case of the destruction arising from war, industrial pollution and environmental degradation, rising rates of drug use and crime and higher healthcare costs due to chronic unemployment, etc.[23]
- *Rational Markets:* The premise that markets are rational is itself irrational. The recent collapse of global oil prices, the 2008 subprime mortgage crisis and the tripling of prices on NASDAQ before the dot com bubble burst in 2000 are glaring instances.[*]
- *Profit-Maximization:* Short-term profit-maximization by enterprises to create value for executives and shareholders is often at the expense of customers, employees, public welfare and the long-term viability of the firm itself. Profit maximization by financial institutions with depositors' money in the previous decade nearly bankrupted the US financial system and precipitated a global crisis.
- *Measurement of Growth and Human Welfare:* A change in economic measurement is essential in order to escape from the blind logic of insufficient concepts. The performance of the economy cannot be realistically assessed by measuring the rate of change of a few macroeconomic variables. All types of growth are not of equal value. Some types are actually negative in terms of their impact on society and human welfare. Rising incomes of the super-rich, growth resulting from war or a Fukushima-type industrial accident, growth in consumption of alcohol and antidepressants, growth

[*] According to Adair Turner NASDAQ rose from 1500 to around '4500 or 5000' before falling back to 1500 after the bust.

resulting from an upward spiraling of oil or speculative real estate prices, growth in public expenditure due to an increase in criminal prosecutions or rising levels of incarceration in prisons are not of equal economic, social or human value to growth that raises the poorest above the poverty line, growth in public or private investment in education and public health, growth in the construction of new homes and public facilities, or growth in the building of new factories to produce goods and create jobs that improve the quality of human life.

- *Non-Monetarized Sector:* Human welfare is a result of activities that take place in the monetarized sector by exchange of money and the non-monetarized sector. A great many of the most valuable sources of human welfare and well-being, especially those undertaken by families and communities in what is referred to as the core sphere, do not involve exchange of money. So too, many of the greatest threats to welfare and well-being, especially those undertaken by families and communities in what is referred to as the core sphere, are not accounted for in monetary terms. Moreover, the line between these sectors is constantly changing and is impacted by public policies.
- *Disconnecting economy from ecology:* Economics as the discipline of the industrial revolution emerged when there was no evidence that natural resources were finite and that the atmosphere could be altered by human activity. This is why economics has taken nature for granted, assuming that resources are unlimited and natural systems could absorb unlimited amounts of pollution. Once economies are recognized as embedded within ecologies that are themselves being degraded, then it will become necessary to accept that it will be impossible to improve well-being for all in more equitable economies if the costs of resource depletion and environmental degradation keep rising. Restoring the future may well become a driver of innovation and economic development—this is certainly true for the renewable energy revolution, with investments in renewables since 2009 greater every year than those in fossil fuels.
- *Ignoring space:* People live in particular spaces, from large cities to small towns and rural areas. Economic relationships and connections to natural systems are shaped by the way these spaces are configured. Sprawling American cities cost more per individual to keep going, which means they require more finance and resources. European cities are more efficient and equitable. Developing cities are largely divided between a small informal and a large formal sector. Economics has tended to ignore space, and yet has assumed that the large bulk of economic production and consumption in modern economies takes place in cities. Urbanization and industrialization have been seen as the indicators of modernization. However, cities can be designed appropriately or not: they can be inclusive or exclusive, more or less equitable, more or less sustainable, more or less safe, more or less functional for the right kinds of productive activities as opposed to property speculation.

Mainstream Economics consists of a few main theories supported by a patchwork of concepts, theorems and models lacking the common foundation, consistency and integration that

characterize knowledge in the natural sciences. However useful elements of the patchwork may be for shedding light on specific issues and fields of activity, they do not constitute in whole or in part a coherent theory of wealth creation, welfare and well-being. Moreover, they fail to address wider and more fundamental issues that need to be considered in order to place new economic theory on a sound basis.

One response to the inadequacy of mainstream economic theory has been the recent proliferation of alternative theories loosely grouped under the heading "heterodox economics". This group includes development, ecological, evolutionary, post-Keynesian, post-Marxist and numerous other schools of economic thought.[*] Each focuses attention on a dimension of economics that is neglected or misunderstood by mainstream theory. In spite of their legion numbers, mainstream theory entrenched in academic citadels continues to effectively drown out most dissenting viewpoints. This assemblage of alternative models and theories is an important development, but it is not sufficiently comprehensive to replace prevailing orthodoxy. We need theory that integrates complementary aspects of the truth, rather than ignoring or rejecting all dissent as superfluous. We need an integrated framework for the social sciences, similar to what we find in the natural sciences.

3. Objectives of New Economic Theory

The call for new economic theory is based on the premise that the persistence of poverty together with rising levels of unemployment, inequality and ecological degradation reflect the limits of the present conceptual system, rather the practical limits of sustainable human development. A new paradigm in economic thinking is needed to make conscious and explicit the underlying concepts that limit humanity's ability to promote rapid advances in welfare and well-being for all human beings.

Economic theory shapes society by shaping understandings, policies, institutions, values, aspirations and beliefs about what is possible. It also provides implicit justification for the application and distribution of social power and the explicit economic arrangements used to support it. It is still difficult to conceive of what precisely should be the shape of new economic theory, but some of its essential characteristics can certainly be identified.

Economics should be explicitly goal-oriented and value-based. It must shed the poise of ivory-tower scientific objectivity and accept responsibility for the wider social and political consequences of economic activity. The only legitimate goal of economic theory is to maximize the welfare and well-being of all human beings. The validity of theory should be judged based on its efficacy in achieving these goals. It should be based on recognition of the true value of human beings as the most precious and perishable of all resources and the source of all creativity and innovation. It should be founded on a global ethic that seeks to maximize the development of human capacities both for their contribution to human welfare and to our sense of fulfilment as productive human beings.

[*] Joanilio Rodolpho Teixeira, et al., presentation on "Foundations of Economics as a Science: Hetherodox View And Critical Approach" at XIII International Colloquium, organized by Centre for African, Asian and Latin American Studies (CEsA), Research in Social Sciences and Management (CSG) and Lisbon School of Economics and Management (ISEG) of the University of Lisbon, May 11-13, 2016.

The objective of economic activity should be sustainable security, welfare and well-being of all human beings, not merely growth and not merely prosperity for a minority of people or some countries.

- NET must include the generation of wealth as a stock which empowers and provides security, welfare as a flow, and well-being as a status which depends on the interaction between intrinsic and extrinsic factors.
- Human welfare and well-being are products of the whole society, of which security, governance, economy, and culture are inseparable parts. They are the product of both monetarized and non-monetarized activities. They are also closely related to the distribution of social power. Social power widely distributed is prosperity. Social power is the distribution system for prosperity.
- All human activity takes place within an environment which includes the action and interaction of physical, social, mental and cultural factors and this environment undergoes a continuous process of evolution. Therefore, the theory must take into account the impact, characteristics and evolution of the environment.

4. Axiological Foundations of NET

NET needs to replace the implicit values of current theory, which often favor specific classes and activities in the guise of freedom and impartiality, with explicit affirmation of values that promote the equitable development of all human beings. Among these, the implicit power exercised by money over public policies and the distribution of benefits in democratic society needs to be fully exposed. *As freedom is a sacred value according to current democratic political theory, equality should be explicitly recognized as a sacred value by new economic theory. The institution of democracy has been conceived as a means to promote individual freedom, though in practice it too often sacrifices real freedom to the tyranny of a majority, an electoral minority or a plutocratic elite. NET should provide the theoretical framework and environmental policies needed to make markets effective instruments for achieving real social equality. Political economy needs to be restored to its rightful position as the arbiter of economic outcomes.*

Values express intention and commitment, but they are not merely utopian ideals or ethical principles. They represent the highest abstract mental formulations of life principles with immense power for practical accomplishment. They represent the quintessence of humanity's acquired wisdom regarding the necessary foundations for human survival, growth, development and evolution.

NET will need to examine the fundamental values on which economic thought is based. It will need to make explicit the values it consciously seeks to promote. It will also need to recognize the tensions and apparent contradictions between values and explain how they can be reconciled in practice.

NET should be based on universally recognized human values, including

1. Respect for Humanity – the inestimable value and unlimited developmental potential of the human being. Human welfare and well-being are the central objective. The development of human capabilities, commonly referred to in economic jargon as Human Capital, is the most precious and indispensable resource for achieving it.
2. Freedom of choice – maximum individual freedom for initiative and choice compatible with the welfare and well-being of the entire collective.
3. Economic rights – the inherent right of every human being to economic security, welfare and well-being.
4. Equity & Fairness – equal protection of rights and equal opportunity for all.
5. Inclusiveness – economic security and welfare for all human beings.
6. Sustainability – protection of the environment, restoring the natural systems we depend on, and ensuring the equal rights of future generations. The gradual emergence of a consensus among countries supporting the UN's value-laden SDGs signifies a growing acceptance of the essentiality of values in economics and other fields of social life, especially the value of sustainability.
7. Peace and social stability – an economy that promotes peace, stability and social harmony.
8. Natural Rights – Natural systems must be seen as benefitting all human and non-human beings in the continuous creative unfolding of evolution.
9. Social Rights – So too, the past achievements of humanity belong to humanity as a whole and their benefits should accrue to all.

5. Epistemological Foundations of NET

New economic theory requires a change in conception regarding the nature of the reality we seek to understand and appropriate ways of knowing it. NET must be founded on an epistemology that more fully encompasses and accurately reflects the full spectrum, multi-dimensional complexity, organic vitality, and evolutionary character of social reality.

5.1. Transdisciplinarity

New theory should abandon the mechanistic, reductionist view of the economy as a machine and replace it with a conception of the economy as a complex, living, and continuously evolving social network of human relationships capable of endless development and enrichment. NET needs to be based on the premise that economy is an inseparable part of a greater whole that encompasses all fields of knowledge and social activity. The health and performance of each part depend on our knowledge and understanding of the principles and processes governing the performance of the whole social organism as well as the

interdependence of its parts. Economic theory and policy need to be founded on a knowledge of the principles and processes that guide and direct social awareness, aspirations and values; the release of social energies and initiative; the organization of social power that channels these energies; and the attitudes and skills which convert the organized energies into tangible benefits for society. Transdisciplinarity is a demanding form of knowledge integration that examines underlying social processes common to all fields as well as the capacity to reflect on reality from the perspectives of different stakeholders, generations and cultures, rather than a single, absolute, 'objective' standard.[24]

5.2. Multidisciplinarity

Great economic accomplishments have always been spurred by significant development of non-economic forces and factors. New theory must integrate economy with all other fields of social life. It must break down the arbitrary divisions that presently divide the social sciences and replace the concept of externalities with a growing awareness of the complex nexus of political, legal, commercial, organizational, technological, social, cultural, and psychological factors that determine economic performance and results. Rather than seeking to isolate and insulate economy from other social factors, NET needs to identify and make explicit all the factors which influence economic performance in order to identify the inherent weaknesses and limitations in political, legal, economic, educational and social policies that constrain the development of human welfare and well-being. The enabling and limiting conditions include geography and physical environment, peace and security, political and social freedom, stable democratic government, conducive and transparent legal framework and implementation, effective and dynamic public administration—rapid, transparent decision-making, public policies for ease of doing business, physical infrastructure for transport and communication, levels of education and training, social values and work ethic.

5.3. Complexity

Society is a complex living organism in which all its component elements are interlinked, interdependent and integrated. Systems thinking has made important contributions to our understanding of complex systems and functioning by providing insights into the dynamics and patterns of interaction between innumerable nodes of activity. A reductionist scientific method is inappropriate for holistic analysis of evolutionary systems of which humanity is an integral part.[25] Complex problems and systems result from networks of multiple interacting causes that cannot be individually distinguished. They must be addressed as entire systems, rather than as piecemeal. They are such that small inputs may result in disproportionate effects. The problems they present cannot be solved once and for ever, but require to be systematically managed and typically any intervention merges into new problems as a result of the interventions dealing with them.[26] Insight into the behavior of complex systems has helped unravel the wide fluctuations and unpredictability that characterize the performance of financial and other markets. It has helped decode the network effects that lead to the concentration of power among the largest nodes in a network. It has also enhanced our understanding of the impact of economic activity on the environment. At the same time, caution is required to

avoid the tendency of the material sciences to reduce our understanding of complex human processes to mechanistic algorithms capable of wreaking havoc on human social systems, as computer trading algorithms have done in recent times.

5.4. Subjective Dimension

Our conception of knowledge needs to fully recognize the central importance of subjective psychological and social factors in determining social outcomes. Human aspirations, perceptions, concepts, attitudes, beliefs and values are fundamental determinants of how people and social systems function. They govern the release and direction of human energies and its conversion into social power. The structure and functioning of social institutions are a product and expression of these subjective factors.

> *"There is no inherent limit to the potential of human resourcefulness and social organization. Thus, there is no inherent limit to human development."*

5.5. Uncertainty

Economics was founded at a time dominated by the search for Newtonian, deterministic principles governing a world ruled by immutable laws and equilibrium equations. Today it still clings to static concepts of equilibrium and certainty, while mainstream science has evolved towards a less deterministic, more creative perspective. New theory needs to reexamine the concepts of certainty and finite limitation implicit in prevailing theory. It needs to recognize the central quest of human beings for security, the inherent limits to certainty in a rapidly evolving society, and the relationship between uncertainty and creativity, which is the source of continuous innovation and potentially unlimited human development.[27]

6. Ontological Foundations of NET

New theory needs to challenge fundamental concepts and premises regarding the nature of social and economic reality.

6.1. Relationship is Wealth

Human accomplishment is the result of interactions, relationship and collaboration among individuals, organizations and groups. Wealth creation, knowledge generation, discovery, invention, and governance are a few of its expressions. The capacity for accomplishment is related to the number, speed, frequency, quality and intensity of these interactions. Wider geographic inclusion, greater speed of communication and transportation, systems and organizational mechanisms that facilitate and support, knowledge and skills that enhance quality and convenience, shared understanding and values, a sense of identification and belonging are among the many factors that increase the human social capacity for accomplishment. Each of these factors must find a place in NET.

6.2. Social Organization

Organization is an inherent capacity of the human mind to arrange people, objects, ideas, processes and activities in an orderly manner capable of multiplying their productivity and reducing waste. Organization of materials and processes is the basis for remarkable technological advances. Organization of people, groups and social processes is the basis for equally remarkable advances in all fields of social life—from trade, production and banking to franchising, just-in-time inventory, global supply chain management, credit cards, electronic banking, Internet, e-commerce, social networks, the sharing economy (e.g. Uber, Airbnb) and the emerging Internet of Things.

Society is a complex social organization capable of directing and converting that energy into effective power to maximize human welfare and well-being. The social organization is a physical arrangement or mechanical system. Society is a living system and its organization is alive, conscious, dynamic and evolving. It is capable of self-organization, self-multiplication and evolution. Our conception of society must recognize the dynamic, adaptive and creative powers of organization. The objectives of NET can best be met by a social organization that enables each individual human being to fully develop and express his individual capacities and endowments as members of a social system that promotes maximum synergy, cooperation and harmony between individuals, communities, nations and humanity as a whole.[28]

6.3. Role of the Individual

Society is the macrocosm. The individual is the microcosm. Society is not merely an aggregate of autonomous individuals. Economy is not merely an impersonal system operating mechanically according to universal laws. Economic performance is not merely the result of the average behavior of an economy's participating members. Society is populated with millions of conscious individuals capable of unique initiatives. The individual as leader, entrepreneur, explorer, pioneer, original thinker and creative artist is the catalyst and source of social innovation and creativity. The actions of a single individual can radically impact economic performance, as the return of Steve Jobs to an ailing Apple Computers in 1996 after a 12-year hiatus led within another dozen years to Apple's emergence as the most valuable company in the world. Social theory focused exclusively on the collective as an aggregate of individuals fails to take into account the creative role of the individual in the evolution of the collective as well as the role of the collective in the development of its individual members. Effective social theory must be founded on an understanding of the complementary roles played by the individual and the collective in social development and evolution and provide insights into how to reconcile individual freedom and collective well-being.[29]

6.4. Social Process

Society evolves by the growth of consciousness and organization. It releases Energy for accomplishment by seeking to continuously raise its level of awareness, understanding, decision-making, and determination to act. It converts that energy into a directed Force for accomplishment by means of the values, goals, objectives and plans it pursues. It transforms the force into Power through the continuous development and improvement of organizational

structures, systems and activities. The quality of the knowledge, skills and attitudes of its individual members determines the results achieved by its activity.

6.5. Human and Social Capabilities

The potential performance of the society ultimately depends on the level of development of its individual members and its social organization, i.e. human capital and social capital. Human capital depends on the knowledge, skills, attitudes, values, character and personality of individuals. Social capital refers to the development of relationships, institutions and networks that produce collaborative attitudes, shared norms, shared values, mutual understanding and trust. It includes the structures that distribute authority and coordinate specialized activities, the standards and systems applied for communication, execution and monitoring of performance, and the values that characterize the functioning of the organization at each level and in each field of its expression. Human and social capital are unique in that they possess the ability to mobilize and utilize the other forms of capital to enhance performance. There is no inherent limit to the potential of human resourcefulness and social organization. Thus, there is no inherent limit to human development.

6.6. Markets as Networking Device

Language is a networking device to facilitate communication between people. Similarly, markets are networking devices designed to facilitate contact and mutually beneficial transactions. Village gatherings and regional fairs have long since given way to national and global markets operating in physical space and cyberspace. Their size and speed have grown exponentially, but the principles governing their operations remain the same. The wider the market, the more the number of participants, the greater the capacity and diversity of the products and services it offers, the greater the trust, confidence, quality, ease and speed of the transactions it facilitates, the greater will be the overall contribution of the market to wealth creation. Like all social institutions, markets function on the basis of trust. The greater the trustworthiness of the parties, systems, products and services involved, the greater the productive power of the market.

6.7. Regulation

The efficacy of any social organization depends on its capacity to release and channel human energy for productive purposes. That is only possible when sufficient freedom and opportunity are provided to all members of society to develop and express their innate potential within a structured framework that harmonizes private self-interest with public good. Freedom for initiative and regulation to ensure cooperation and fairness go hand in hand. The notion that markets are primarily a field for competition is a social construction borrowed from biological evolutionary theory that grossly distorts the nature of markets by reducing economic activity to a zero-sum game. The reality is that economy is a collaborative enterprise of the entire society in which buyers and sellers, producers and suppliers, bankers and intermediaries all collaborate to achieve a power and efficiency that none can otherwise achieve. Law and regulation are intended to provide a level playing field for all parties to realize their maximum potential. Freedom and authority are complementary values. Both

individual freedom and good governance are essential conditions for effective markets. In the absence of freedom, markets are reduced to commercial monopolies or labyrinthine government bureaucracies that inhibit human initiative and creativity. In the absence of effective regulatory mechanisms, the functioning of markets is determined by the relative power of the parties involved. The larger, stronger, more informed and better organized dominate over the rest and pursue their individual benefit at the expense of others and the general welfare. Without effective regulation, economic power becomes increasingly concentrated, competition is reduced and the incentives for efficiency and innovation are reduced. Like other social institutions, the capacity of markets to serve social objectives depends on the values, laws, rules and procedures by which they function and the authority of the agencies responsible for their governance.

6.8. Law

Law is an expression of the codified public conscience regarding the forms and norms of conduct that are deemed socially acceptable. Since law has evolved out of past precedent, it largely reflects the prevailing values and norms of society in the past, rather than the values and norms toward which it is evolving. Since law is the result of political processes, it largely reflects how power has been enjoyed and distributed in the past, rather than how it should be distributed based on constitutional rights. Law today is more largely a reflection of past values and the past distribution of social power, rather than that which is optimal for achievement of social objectives. The evolution of property law is one of the reasons for the increasing concentration of wealth in the USA and other countries. Neoclassical economics tends to accept prevailing property laws as given. NET should include the exploration of legal factors with the potential to modify the formal institutional frameworks in which economic agents operate.[30] Research reported by the *Economist* challenges the evidence that current patent laws promote investment and innovation as intended.[31] It cites evidence that prevailing copyright and patent laws constrain competition and artificially inflate prices and profits. Modification of law represents an important instrument for improving the outcomes of the economic system. A deeper understanding of private property rights will make it possible to establish more secure, equitable and prosperous foundations for the market economy.

6.9. Money

Like language and markets, money is fundamentally a networking tool which facilitates transactions between different people, organizations, points in time and places in space. *The value of money arises not from its intrinsic worth, but rather from its acceptance as a symbol of value by other people.* The more widely it is accepted, trusted and respected, the greater its value. Ultimately the value of money depends on the accumulated past achievements, present productive capacities and future productive potentials of the society in which it is used. Like the power of knowledge, the value of money also depends on its distribution in society. The wider the distribution, the greater the capacity of society to utilize it productively to enhance social capacity and social benefits. The higher the level of wealth and income inequality, the lower the utility of money for promoting the welfare and well-being of citizens. NET must

include the exploration of alternative forms of organization of property and money, as they are fluid and subject to human invention.

> *"Achieving full employment is not difficult. It is only difficult to achieve under the current theoretical framework that promotes mindless consumption, dissipation and wastefulness as economically sound."*

6.10. Price

Price is a creative organizational mechanism for assigning an economic value to dissimilar economic goods and services so they can be freely exchanged for one another through the medium of money. In the dismal ages before the capacity and responsibility of government for the welfare of people were widely recognized in the modern era, price served as an impersonal mechanism for the allocation of scarce economic goods. Today humanity no longer lacks the means to promote the welfare and well-being of all its members. Today government can no longer shirk the responsibility for maximizing that welfare. Long ago, microeconomic theorists defined the ideal conditions under which price would allocate scarce resources most effectively. Those conditions have rarely been met in practice either in the past or the present. It is the responsibility of government to create a policy environment that counters the tendency toward monopolistic control of markets on the one hand and the unjust allocation of economic goods without regard for human values on the other.

6.11. Measurement

New theory needs to be based on measures of value that more truly reflect the real and sustainable contribution of human activity to human welfare and well-being. It should also adopt measures of wealth that reflect the true contribution of activities to wealth generation and the net loss of wealth (negative value) resulting from depletion and pollution of the natural environment. It needs to distinguish between wealth as a stock and welfare as a flow.

6.12. Non-Monetarized Sector

More than half of all useful work undertaken is unpaid and falls outside the monetarized sector. Much of this work contributes to the bonding and stability of society and has far greater importance than its mere practical utility. New theory should broaden notions of wealth and well-being to incorporate the large non-monetarized sector, which is ignored by present theory but plays such a central role in determining our real freedom, comfort, social security, human relations, and the quality of life.[32]

6.13. Social Power

Economic theory is not merely about production, distribution and wealth creation. Economic conceptions contribute to and are impacted by the distribution of power in society.

NET must make explicit the impact of various forms of social power on the laws, institutions, public policies and private practices impacting economic activities and human welfare. All economics is really Political Economy, as the study of the economics of states was originally termed. Economics cannot be divorced or considered separately from politics. The functioning of economy is powerfully influenced by the exercise of political power and social influence and vice versa. Social power is the capacity to accomplish work in society.

Money, political influence, popularity, media research, transport, communication, knowledge, research capacity are all forms of social power which are interconvertible. The interrelationship between political and economic power is of particular relevance to the functioning of economies because it results in a skewing of policies in favor of some parties to the detriment of others and the general public, leading to monopolistic advantages and public corruption. Democracy today contains a large measure of plutocracy. Property rights, subsidies, tax rates, incentives, zoning laws, patent and copyright, corruption and crime are all strongly influenced by the exercise of social power. The debate regarding free markets and regulation is really a struggle for power—money power and political influence vs. power to promote social welfare. Human rights, law and public policy are powerful determinants of the distribution of social power and therefore of economic benefits.

Historical evidence confirms that the wider the distribution of power in society, the greater is the overall capacity of the society to achieve its objectives. The most powerful monarchs in history possessed far greater individual power than democratically elected leaders today, but no monarch in history can rival the overall capacity of modern societies to promote the welfare and well-being of their citizens. Universal education enhances the mental power of the people to take informed, effective decisions. Fair access to the use of social systems enhances the organizational capacity of the people. Access to remunerative employment ensures people the opportunity to exercise their talents and capacities for productive purposes and personal benefit. Deprivation in all its forms limits the power of the individual and by extension the overall power of society to accomplish. As freedom of choice is an essential condition for the fullest development and expression of individual potentials, equitable distribution of social power is the essential condition for the fullest development and expression of social potentials.

Money is a form of social power with a unique characteristic. It lends itself more readily than any other form to conversion from one form of power into another. Money generates access to political power through elections and political donations, to the best quality education and healthcare, to all forms of entertainment, to the most advanced forms of communication and transportation, etc. This characteristic makes money a very effective means for the wider distribution of social power. For the same reason, money also represents one of the greatest obstacles to the equitable distribution of social power. For those who possess wealth can utilize it to seize political power or social influence or convert them into greater wealth. The increasing domination of democratic politics by money through both legal and illegal means represents one of the greatest threats to democratic freedoms today.

6.14. Employment

NET needs to take an unequivocal position on the place of employment in economic theory. Employment in a market economy is the economic equivalent of the right to vote in a democratic polity. As universal suffrage is the basis for political democracy, employment is the basis for economic democracy. The principle of democratic rights was enshrined long ago, but the actual extension of democratic rights to women, blacks, the poor and minorities was achieved as the result of a long, difficult and violent struggle. They were not extended because they were possible or practical, but because they were deemed fundamental and inviolable. The same is true of the right to employment. It must be recognized as a fundamental human right. Then it becomes the responsibility of governments to ensure it is achieved. Democracies which protect the right to property have an equal obligation to protect the opportunity for the young to acquire gainful employment, which is essential for social survival in a modern economic system where government regulates and controls so many aspects of life. Achieving full employment is not difficult. It is only difficult to achieve under the current theoretical framework that promotes mindless consumption, dissipation and wastefulness as economically sound, while standing by helplessly in the face of social injustice and economic exploitation. The current policy framework which incentivizes capital investment while taxing payroll is a clear example of an in-built policy bias that undermines human security and well-being.

6.15. Public Goods

The most important failure of markets has been with respect to management of the domestic environment and global commons as a public good. A century ago, capitalism acquired a social conscience to meet the perceived threat of socialism and arrived at a balance between public and private good that resulted in unprecedented prosperity in OECD countries. The collapse of communism symbolized by the fall of the Berlin Wall in 1989 coincided with a resurgence of neo-liberal conceptions that have become a root cause of the current crises. New theory must restore the balance that optimizes the welfare and economic security of all, while giving scope for the creative contributions of each. There is a need to develop a whole range of hybrid goods which, like insurance, serve simultaneously the interests of both the private citizen and society-at-large.

6.16. Global Governance

The entire world economy is increasingly operating as a single, integrated market and world system. Yet economic theory is still largely predicated on concepts, theories, models, policies and actions for application at the national level. This has left a wild frontier of unregulated and often lawless activity at the international level. It has also led to a resurgence of a previously discredited neoliberalism, which serves as an obstacle both to effective global regulation and the development of effective economic thinking. The centering of theory on national level concepts, institutions and policies aggravates the division of humanity into competing nations playing a zero-sum game. Globally, relevant economic theory is needed as a foundation for the establishment of effective institutions and policies capable of maximizing

welfare and well-being for all humanity. NET should strive to encompass the full range of relevant perspectives from the local to the global level.

6.17. Evolution of Global Society

Human development throughout the ages has been mostly a subconscious process of experimentation and trial and error learning gradually organized, developed and refined into effective knowledge, skills, values, rules, strategies, systems, organizations, policies, processes and activities which then evolved over time. The aim of the social sciences is to make conscious the underlying evolutionary process that has governed human development up to now and to codify that knowledge in a form that will facilitate and accelerate the development of new institutions, policies and activities capable of enhancing the organization of global society for the betterment of all human beings. The effort to consciously formulate new economic theory represents an important step in that direction.

6.18. Ecology

The full development of human potential and social power is only possible and sustainable when humanity re-establishes a positive, harmonious relationship with all of life and the physical environment. The mindless overexploitation of resource, environmental degradation, pollution and climatic instability are rooted in the prevailing consciousness and mindset of modern society derived from a mechanistic, reductionist, utilitarian and egoistic viewpoint and values that increasingly isolate the individual from other people and society and isolate the human collective from the wider world in which we live. Relationship is the foundation for all forms of wealth creation—physical, social, economic, intellectual, artistic and spiritual. Reconnecting with other people, social purpose, the environment and our own spiritual being based on values of respect, harmony, beauty and self-giving are the means and precondition for achieving sustainable human welfare and well-being for all.

7. NET and Pedagogy

The rapidly expanding student movement demanding pluralism in economics education marks an important step beyond the prevailing orthodoxy towards a more open-minded, inclusive and integrated study of the subject.[33,*] A change in content is not enough. It must also be accompanied by a change in pedagogy and thinking. In order to realize and practice new theory, the paradigm must also be taught in an open way that encourages critical thinking and innovative problem-solving. It would be contradictory to claim that social reality is an open system and then continue to teach in the didactic prescriptive way that has been conducive to mainstream modelling. It would be counter-productive to the development of new theory and also to the creation of the kinds of citizens that express the best of what NET is seeking to achieve.

Beyond that, there must also be a shift in the modes of thinking developed through the educational system. Today the discipline of Economics is still dominated by analytic thinking that divides and subdivides reality into smaller parts and regards each part as a whole in

[*] See Rethinking Economics, http://www.rethinkeconomics.org/about/

itself. Specializations continue to proliferate, resulting in more and more experts who know less and less about the wider economic, political, social and ecological reality within which they operate. The growing adoption of systems thinking seeks to compensate for reductionism by focusing on the interconnections and interdependencies between the parts, but in practice it often reduces complex social reality to mechanistic models or, overwhelmed by the complexity it seeks to represent, it shifts the emphasis from theoretical understanding to analysis of data as the primary source of knowledge. New economic and social theory will require conscious efforts to develop more organic, integrated modes of thinking than those prevalent in education today.[34] This is a challenge not only for economics but one applicable to all the social sciences and higher education in general.

8. Conclusion

The purpose of any social system is to effectively release and channel the energies of the population to achieve socially desirable goals. Economy is one of the most fundamental and essential of those systems. No matter how great the achievements of modern society, the present system certainly does not fully utilize the energies and capabilities of its people to maximize the welfare and well-being of all citizens. In future we can and must do better.

A new conceptual framework is urgently needed to expose the fallacies in prevailing theory and project an alternative conception attuned to the realities of the 21st century and the welfare of all humanity. Alternative views on economic theory and practice have been surfacing for decades, but until recently they have been shut out, rejected or dismissed by mainstream orthodox economists of different schools, because they challenge the fundamental assumptions on which all mainstream economic thought and prevailing economic policy are based. Today the situation is different. Authoritative alternative views of economy based on hard facts and compelling arguments are now gaining serious attention, but they still remain largely off-campus, off-camera, and off the radar of public policy and decision-makers.

New thinking—new economic theory—has the power to affect a rapid and radical change to a new economy that

- Maximizes human welfare and well-being instead of limitless consumption and unregulated economic growth for their own sake;
- Perceives people as the most precious resource and development of all forms of human and social capacities as the most important form of productive capital;
- Ensures employment opportunities and meaningful occupation for all, including both youth and the increasingly healthy and active elderly populations;
- Regulates the global casino of financial speculation that currently destabilizes economies and impoverishes people;
- Manages the world's resources in a sustainable manner for both present and future generations;

- Promotes a more equitable distribution of income within the constraints imposed by the planet's resources;
- Resolves the apparent contradiction between human welfare and ecological sustainability by shifting the focus from unlimited, wasteful, material consumption based on energy and material-intensive technologies to maximum security, welfare, well-being and developmental opportunities for people.

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Toward a New Theory of Sustainable Development:
Drawing on Insights from Developments in Modern Legal Theory*

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Abstract

In the light of the countless hours invested in the development of the Sustainable Development Goals—the set of targets and indicators relating to future international human and sustainable development, which replaced the Millennium Development Goals (MDGs) at the end of 2015—by hundreds of the world's top minds, in addition to more than twenty-five years of analysis associated with the development, implementation, monitoring, and evaluation of the MDGs, international lawyers and economists may wonder whether there is room for a new theory of sustainable development. It might seem counterintuitive to presume that new light might be shed on this vastly over-analyzed concept. However, the goal of this article is indeed to bring a new understanding to this important idea by assaying the current dominant legal theory of neo-liberalism and the radical inequality it promotes, and unpacking processes and identifying insights from advanced legal theory for the development of a new theory of sustainable development, with a primary focus on counteracting radical inequality.

1. Introduction

From 2000 to 2015, the Millennium Development Goals (MDGs) were simultaneously an articulation of eight of the world's most pressing human development and environmental sustainability priorities and an effort to construct a tracking regime to ascertain progress against these goals.† More specifically, the MDGs were time-bound, quantitative actions to eradicate extreme poverty and hunger, improve health and education for all, and ensure

* The views expressed are those of the authors and do not represent those of The World Bank Group or its Board of Directors.

† See United Nations Millennium Development Goals, *available at* http://www.un.org/millenniumgoals/; see also, United Nations Millennium Declaration, G.A. Res 55/2, UN Doc. A/Res/55/2 (2000) (Sept 18, 2000), *available at* http://mdgs.un.org/unsd/mdg/; see also Kemal Dervis, *Bridging the Gap: How the Millennium Development Goals are Uniting the Fight Against Global Poverty*, 6 Sustainable Development Law & Policy 1, 2 (2005) ("[T]here is unprecedented global support for achieving the MDGs, the eight goals agreed to by all UN Member States in the year 2000...").

environmental sustainability, among related goals, which mutually reinforced each other.[*] Well before the end of 2015, it was clear that progress against the MDGs was at best uneven and that the MDGs insufficiently addressed—or entirely neglected—a range of existential challenges for humanity and the planet.[†] As a result, following the 2010 High-level Plenary Meeting of the General Assembly on the MDGs, former United Nations (UN) Secretary-General Ban Ki-Moon established the UN System Task Team in September 2011 to lead UN preparations for the post-2015 UN development agenda.[‡] The Sustainable Development Goals (SDGs)—the set of targets and indicators relating to future international human and sustainable development—thus replaced the Millennium Development Goals at the end of 2015.[§]

By way of a snapshot of the multi-year process in which hundreds of global experts weighed in to create the 17 SDGs, their 169 targets, and their 304 proposed indicators,[¶] the SDGs were first formally discussed at the United Nations Conference on Sustainable Development held in Rio de Janeiro in June 2012 ("Rio+20").[**] At Rio+20, UN Member States agreed to establish an intergovernmental process to develop a set of "action-oriented, concise and easy to communicate" Sustainable Development Goals (SDGs) to help drive the implementation of sustainable development.[††] The Rio+20 outcome document, *The Future We Want*, also calls for the goals to be coherent with the United Nations development agenda beyond 2015.[‡‡] A 30-member Open Working Group (OWG) of the General Assembly was tasked with preparing a proposal on the SDGs, as well as a concrete list of targets and measurable indicators to ensure that progress against the SDGs can be tracked.[§§] This Open Working Group thereafter proposed 17 goals covering a broad range of sustainable development

[*] See *Millennium Development Goals Indicators, available at*: http://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm (detailing the 8 MDGs, their 21 targets, and more than 60 indicators developed to track progress). *See also, Monitoring progress towards the achievement of the Millennium Development Goals, available at*: http://millenniumindicators.un.org/unsd/mi/mi_highlights.asp ("To help track progress, the United Nations Secretariat and the specialized agencies of the UN system, as well as representatives of IMF, the World Bank and OECD defined a set of time-bound and measurable goals and targets for combating poverty, hunger, disease, illiteracy, environmental degradation and discrimination against women"); UN General Assembly, *Road map towards the implementation of the United Nations Millennium Declaration: Report of the Secretary-General*, A/56/326 (2001), available at: https://documents-dds-ny.un.org/doc/UNDOC/GEN/N01/526/07/PDF/N0152607.pdf?OpenElement

[†] See, e.g., William Easterly, *How the Millennium Development Goals are Unfair to Africa*, 14 Global Economy & Development, Working Paper, Brookings (November 2007), *available at*: http://www.brookings.edu/~/media/research/files/papers/2007/11/poverty-easterly/11_poverty_easterly.pdf (arguing that the MDGs were designed in a poor and arbitrary way, which would inevitably put the continent of Africa at a disadvantage in tracking progress). This argument was validated by the final MDG report itself in 2015. *See* the *Millennium Development Goals Report 2015* at 8, *available at*: http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf ("...progress [against the MDGs] has been uneven across regions and countries, leaving significant gaps. Millions of people are being left behind, especially the poorest and those disadvantaged because of their sex, age, disability, ethnicity or geographic location.").

[‡] See United Nations Development Policy and Analysis Division, *Preparing for the Development Agenda Beyond 2015*, *available at* http://www.un.org/en/development/desa/policy/untaskteam_undf/.

[§] See *The Sustainable Development Agenda*, *available at*: http://www.un.org/sustainabledevelopment/development-agenda/ ("On 1 January 2016, the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development—adopted by world leaders in September 2015 at an historic UN Summit—officially came into force...The SDGs build on the success of the Millennium Development Goals (MDGs) and aim to go further to end all forms of poverty.")

[¶] These numbers of targets and indicators are current as of the time of this writing. *See Transforming our world: the 2030 Agenda for Sustainable Development*, G.A. RES/70/1, UN Doc A/RES/70/1 (Sep 25 2015), *available at*: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E; *General Comments on the proposed goals, targets, and indicators for the sustainable development agenda*, at 2, *available at*: http://unstats.un.org/sdgs/files/open-consultation-iaeg/Assessment%20of%20proposed%20SDG%20indicators%20(priority%20and%20missing).pdf

[**] See *United Nations Conference on Sustainable Development*, Rio+20, *available at*: https://sustainabledevelopment.un.org/rio20.

[††] See *The Future We Want* at Para 247, G.A RES/66/288, UN Doc A/RES/66/288 (July 27, 2012), *available at*: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/66/288&Lang=E.

[‡‡] See *id*. at Para 75.

[§§] *Id*. at Para 248.

issues.[*] On September 25, 2015, the United Nations General Assembly accepted that the Open Working Group's proposals would become the basis of the post-2015 development agenda, comprising the following 17 goals:

1. End poverty in all its forms everywhere
2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture
3. Ensure healthy lives and promote well-being for all at all ages
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5. Achieve gender equality and empower all women and girls
6. Ensure availability and sustainable management of water and sanitation for all
7. Ensure access to affordable, reliable, sustainable and modern energy for all
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
10. Reduce inequality within and among countries
11. Make cities and human settlements inclusive, safe, resilient and sustainable
12. Ensure sustainable consumption and production patterns
13. Take urgent action to combat climate change and its impacts
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development[†]

Under the auspices of the Inter-agency and Expert Group on the Sustainable Development Goal (IAEG-SDGs) Indicators, Member States emphasized that

[*] See *Open Working Group Proposal for Sustainable Development Goals*, *available at*: https://sustainabledevelopment.un.org/content/documents/1579SDGs%20Proposal.pdf; *Integrated and coordinated implementation of and follow-up to the outcomes of the major United Nations conferences and summits in the economic, social and related fields, Sustainable development: implementation of Agenda 21; the Programme for the Further Implementation of Agenda 21 and the outcomes of the World Summit on Sustainable Development and of the United Nations Conference on Sustainable Development; Follow-up to the outcome of the Millennium Summit*, G.A. RES/68/970, UN Doc A/68/970 (Aug 12 2014), *available at*: http://www.un.org/ga/search/view_doc.asp?symbol=A/68/970&Lang=E.

[†] See *Transforming our world: the 2030 Agenda for Sustainable Development*, G.A. RES/70/1, UN Doc A/RES/70/1 (Sep 25 2015), *available at*: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

> indicators must directly respond to the goals and targets agreed by the Open Working Group and to their level of ambition; must not undermine or reinterpret the targets; must cover all targets, including targets on means of implementation and give equal weight to all targets; must maintain the balance achieved,... should not introduce any new or contentious issues... [and] that global indicators should be limited in number and should include multi-purpose indicators that address several targets at the same time.*

"Market fundamentalism has tended to obscure salience of human choice as the critical factor in energizing human capital in the evolution of political economy and sustainable development."

With respect to the design of the indicator framework and the criteria of indicator selection, Member States agreed to take criteria into account which emerged from the Expert Group Meeting on the indicator framework for the post-2015 development agenda (in February 2015), and to follow a framework approach in its work. Member states further recognized that while the number of global indicators must be limited, some targets might require multiple indicators to measure their different aspects and recognized the need to systematically address the issue of disaggregation, with a primary goal of "leaving no one behind." Moreover, in line with its Terms of Reference, the IAEG-SDGs has developed a proposal for an indicator framework and a list of indicators for the monitoring of the goals and targets of the post-2015 development agenda at the global level—this proposal was considered for adoption by the Statistical Commission at its 47th session in March 2016 and later presented to the designated political inter-governmental process for its consideration. The IAEG-SDGs has also agreed to establish two discussion streams to which all its members are invited and encouraged to participate: the first one focusing on conceptual frameworks and indicator concepts and definitions, and the second one focusing on identifying linkages among indicators across goals and targets (to date, offers have been made by the Philippines to facilitate the first discussion stream, and by Italy to facilitate the second discussion stream).

In the light of the countless hours invested in the development of the SDGs by hundreds of the world's top minds, in addition to more than twenty-five years of analysis associated with the development, implementation, monitoring, and evaluation of the MDGs, international lawyers and economists may wonder whether there is room for a new theory of sustainable development. It might seem counterintuitive to presume that we might shed new light on the vastly over-analyzed concept. However, the goal of this article is indeed to bring a new understanding to this important idea.

Part II of this article assays the current dominant legal theory of neo-liberalism and the radical inequality it promotes. Part III unpacks processes and identifies insights from

* *See Inter-agency and Expert Group on the Sustainable Development Goal Indicators: Tentative timeline, work plan and organization of work* (July 7, 2015), *available at*: http://unstats.un.org/sdgs/files/IAEG-SDGs%20-%20timeline%20-%2020150707.pdf

advanced legal theory for the development of a new theory of sustainable development, with a primary focus on counteracting radical inequality. Part IV offers general conclusions.

2. The Neo-Liberal Economic Model and Radical Inequality

The private law aspect is a fundamental component of the conception of the rule of law. It stabilizes expectations about the value of goods and services without the cost of state intervention—which has economic value toward achieving a balance between public and private control over institutions and resources—and is thus critical for sustainable development. The ideological importance of the freedom of contract and the right to exchange and acquire property thus became an organizing principle of the capitalist world. However, market fundamentalism has tended to obscure the role of human capital and the importance of the decision-making aspect of human capital in the production and distribution of desired goods and services. Put another way, market fundamentalism has tended to obscure salience of human choice as the critical factor in energizing human capital in the evolution of political economy and sustainable development. The continuing search for a theory of sustainable development parallels the challenges of the search for a new paradigm that speaks realistically to the crisis of political economy in global public order.

The current dominant economic theory is neo-liberalism, the foundations of which are rooted in market fundamentalism. La Porta, Lopez-de-Silanes, Shleifer and Vishny argued that the achievement of efficient financial markets—and thus economic development—is contingent on the inauguration of the right legal code.[*] In other words, in the neo-liberal view, the market functions largely as a self-generating autonomous institution, which controls and regulates the freedom of contract and the nature of value in terms of property. The market 'machine' functions as it does because concepts of liberty and property are provided for and protected by law; popular conceptions about the market as final arbiter of pricing, foreign exchange rates and more, the liberty to contract, and value related to real and intellectual property have become reified. For example, it is useful to consider the crisis of the Great Depression of the early 1930s, which was an outcome of the then-pervasive belief in *laissez-faire* economics and that the market could self-regulate.[†] A core lesson from the Great Depression was that it was caused by human choices and could be resolved by human choices. The role of the New Deal in regulating the legal foundations of its economic emphasis permitted government intervention to restrain the unlimited power of the private sector often validated by fundamental law. Two of the most important consequences of the victory of the New Deal were reflected first in the Atlantic Charter, which articulated both the war aims of the Allies and a vision for the future, which included freedom from want.[‡] These ideas found

[*] See generally, Rafael La Porta, et al, *Legal Determinants of External Finance*, 3 Journal of Finance LII 1131-1150 (1997); Rafael La Porta, et al, *Law and Finance*, 6 Journal of Political Economy 106, 1113-1155 (1998).

[†] Theodore Rosenof explained that the…devastation of the Great Depression...inspire[d] powerful challenges to orthodox theory, most notably that of Keynes. Orthodoxy had held that the economic "system" or "mechanism" was inherently self-correcting, that downturns were necessarily followed by cyclical upswings, that institutional "imperfections" or external "shocks" were mere aberrations, and that government intervention would only impede and delay normal and natural readjustment and recovery.

See Theodore Rosenof, Economics in the Long Run: New Deal Theorists and their Legacies: 1933-1993 5 (1997).

[‡] Roosevelt articulated four freedoms: freedom from fear, freedom from want, freedom of expression, and freedom of conscience and belief, all of which constituted the war aims of the Allies. *See Four Freedoms Speech*, *Franklin D. Roosevelt*, *1941*, *in* The Public Papers and Addresses of Franklin D. Roosevelt 663 (Facts-on-File, Inc. ed., 1995).

expression in post-war efforts to give direction to global economic development.[*] The economic foundations of international human rights were expressed in the Universal Declaration of Human Rights[†] as well as several important UN documents culminating in the Declaration on the Right to Development.[‡] These developments confronted the emergence of neo-liberal political economy, with a claimed global reach.

Despite the lessons of the Great Depression and the achievements which followed, only eighty years later another economic crisis re-triggered fundamental concerns about the relationship between markets, governments and regulators, and posed further challenges to scholars and intellectuals seeking to develop a durable theory of sustainable development.[§] Until relatively recently, a regulatory enquiry into potential misconduct by a financial institution was often a final "grade" where compliance, corporate governance and other internal control systems have failed to establish an effective operating environment. The global economic crisis of 2008 highlighted the global nature of the financial services industry and the domino effect, a serious failure of regulatory and political controls over financial markets and institutions can have on the soundness of global economies in general and the financial system in particular. The ascendance of neo-liberalism has since had to confront the problems of a global economic system characterized by a lack of regulation, including and particularly of trading financial derivatives, exotic financial instruments, such as credit default swaps, hedge funds and more. Efforts by regulators since then to re-establish economic stability and market confidence have highlighted the need for greater communication, information sharing and co-operation amongst international regulators. Cross-border investigations, harmonization of financial rules and regulations, and other steps toward regulatory convergence are crucial components of a sustainable theory of economic development because they can facilitate the successful and meaningful execution of international investigations and thus establish confidence in the effective regulatory supervision of financial organizations.[¶] Legislation such as the Markets in Financial Instruments Directive[**] in Europe already mirrors in part certain US rules, such as FINRA Rules.[††] This could not be highlighted more potently than by the investigations by law enforcement in the US of those financial organizations most severely impacted by the crisis, including Lehman Brothers, AIG, Fannie Mae and Freddie Mac. The wake-up call received by those organizations in the financial services sector that have relied on the notion of being "too big to fail" was epic. There is a profound lesson in this for a sustainable development paradigm: financial organizations that are "too interconnected to fail"

[*] See generally, Michael Bordo, *The Bretton Woods International Monetary System: A Historical Overview*, in A Retrospective on the Bretton Woods System: Lessons for International Monetary Reform, 3 (Michael Bordo & Barry Eichengreen, eds., 1993).

[†] UN General Assembly, Universal Declaration of Human Rights, 10 December 1948, 217 A (III). Noted in Article 22: "Everyone…has the right to social security and is entitled to realization… of the economic, social and cultural rights indispensable for his dignity and the free development of his personality."

[‡] United Nations Declaration on the Right to Development, G.A. Resolution 41/128 (Dec. 4, 1986).

[§] See generally, Deniz Igan and Mishra, Prachi, *Wall Street, Capitol Hill, and K Street: Political Influence and Financial Regulation*, 57 Journal of Law and Economics 5 (2014), *available at*: http://chicagounbound.uchicago.edu/jle/vol57/iss5/7.

[¶] See Matthew Turk, *Reframing International Financial Regulation After the Global Financial Crisis: Rational States and Interdependence, not Regulatory Networks and Soft Law*, 36 Mich. J. Int'l L. 59, 62 (2014) (explaining that "at a high level, international financial regulation can be divided into the dual goals of maximizing the potential efficiency gains from global integration of financial markets and minimizing the losses threatened by the crises and instability that have historically characterized financial integration").

[**] Markets in Financial Instruments Directive (Directive 2004/39/EC), available at: http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1398325978410&uri=CELEX:02004L0039-20110104 (last visited Feb 26 2016).

[††] The Financial Industry Regulatory Authority ("FINRA") Rules, *available at*: http://finra.complinet.com/en/display/display.html?rbid=2403&element_id=607

will be bailed out by governments and regulators, since letting them go under would have too great an impact on ordinary people and their livelihoods.

"The consequence of inequality is that the most important resource in a nation's economic profile—its human capital—is often underutilized."

The effect of the neo-liberal model on global resources and the climate has also been severe. However, a creeping recognition that unrestrained, free enterprise could exhaust the resources it exploits and otherwise irreparably change the climate has surfaced in the popular consciousness in recent decades. For example, in 1987, the Brundtland Report connected sustainability to development by maintaining that development should promote the human development of people today without compromising the integral human development of people tomorrow.[*] An objective of a theory of sustainable development is that human development must create sustainable conditions of living for all human beings, now and in the future. A theory of sustainable development would necessarily insist that non-renewable resources be used modestly, until they can be entirely eclipsed by renewable resources, since the unlimited exploitation of certain resources could have consequences for the survivability of humanity in light of the ecological conditions of climate change.[†] However, notwithstanding increasingly widespread efforts, the concept of sustainable development is still a highly contested notion.[‡] A multitude of interest groups have latched on to the idea of sustainable development and given it a priority gloss which suits their particular interest orientation. Some interest groups may focus on human development, others may focus on environmental protection. In short, the integration of environmental, social and matters of political economy is an issue that cannot be usefully described, analyzed and evaluated without a recognition that all of these issues reflect matters of interdependence and inter-determination.[§] They require holistic thinking.

The neo-liberal political economy has likewise had significant political consequences on the distribution of the benefits of economic enterprise; as a global matter, it promotes a

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[*] Brundtland Comm'n, *Report of the World Commission on Environmental & Development: Our Common Future*, ch. 2, Para 1, UN Doc. A/42/427 (Oct. 1987).

[†] The Report, *Transforming our World: the 2030 Agenda for Sustainable Development*, establishes the current global context with respect to nonrenewable resources and the implications of climate change:

Natural resource depletion and adverse impacts of environmental degradation, including desertification, drought, land degradation, freshwater scarcity and loss of biodiversity, add to and exacerbate the list of challenges which humanity faces. Climate change is one of the greatest challenges of our time and its adverse impacts undermine the ability of all countries to achieve sustainable development. Increases in global temperature, sea level rise, ocean acidification and other climate change impacts are seriously affecting coastal areas and low-lying coastal countries, including many least developed countries and small island developing States. The survival of many societies, and of the biological support systems of the planet, is at risk.

See Transforming our World: the 2030 Agenda for Sustainable Development, G.A. RES/70/1, UN Doc A/RES/70/1 at Para 14 (Sep 25 2015), *available at*: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E. *See also*, World Health Organization, Climate Change and Human Health (A. J. McMichael, A. Haines, R. Slooff, and S. Kovats. eds.) 96 – 99 (Geneva, Switzerland, 1996) (detailing the human cost of decreased supplies of potable water which results from climate change, particularly the spread of waterborne disease).

[‡] See generally, Colin Williams & Andrew Millington, *The diverse and contested meanings of sustainable development*, 170 the geographical journal 2 (June 2004); and Steve Connelly, *Mapping Sustainable Development as a Contested Concept*, 12 Local Environment 3, (June 2007).

[§] See Bob Giddings, et al, *Environment, Economy and Society: Fitting Them Together into Sustainable Development*, 10 Sustainable Development 4 (2002).

radical form of inequality.[*] The consequence of inequality is that the most important resource in a nation's economic profile—its human capital—is often underutilized.[†] A theory of sustainable development would reflect the well accepted economic concept that human and social capital contribute to growth and stability; this concept emerged from the recognition that physical capital is far from the sum total of a state's total capital, which directly conditions a state's level of economic development. Human capital describes the economic value of the application of human knowledge and skill, which can be improved through investment, since the quality of labor conditions production input, which in part conditions economic growth.[‡] Social capital describes the economic value of intangible aspects of human relationships, customs, and social institutions, including norms and networks, which inform and condition community-level capacity to work together to meet collective needs and achieve common goals.[§] While this necessitates investment in institutions to encourage critical thinking, other factors, such as the political environment, culture and taboo, the strength of public networks, social cohesion or solidarity, access to information, communication, and more also directly impact the economic value of social capital. These two forms of capital are themselves interconnected, as the quality of one can help or hinder the quality of the other.[¶] Economic crises in recent human history bear out the importance of human and social capital, since the relative health of a state's labor market is a frontline indicator of overall economic health.[**] Long term human and social capital investments positively impact employment and ultimately reduce national economic vulnerability when crises erupt.

While radical inequality is a global phenomenon,[††] one need look no further than the American experience in recent decades for a potent example of the inexorable expansion of inequality within an economic system. Distinguished economists tell us that one percent of our population takes one quarter of all income in the United States, that this one percent controls forty percent of the nation's wealth, and that this one percent's income is rising. The neoliberal economic model has created an enabling environment for this ever-worsening inequality; in short, the explosion of radical inequality is an outcome of the policy process itself. When the US congress cuts taxes on the highest incomes and capital gains, and enacts

[*] See generally, James K. Galbraith, *Global inequality and global macroeconomics*, 29 Journal of Policy Modeling 4 (2007); Vicente Navarro, *Neoliberalism as a Class Ideology; Or, the Political Causes of the Growth of Inequalities*, 31 Int J Health Serv 1 (2007); Lisa Duggan, The twilight of equality?: Neoliberalism, cultural politics, and the attack on democracy (2012); and George DeMartino, Global economy, global justice: Theoretical and policy alternatives to neoliberalism (2002).

[†] See Oded Galor, *Inequality, human capital formation and the process of development*, Working Paper No. w17058, National Bureau of Economic Research at 25 (2011) ("...as human capital has become the prime engine of economic growth, a more equal distribution of income…has stimulated investment in human capital and promoted economic growth").

[‡] Theodore Schultz, *Investment in human capital*, 51 The American economic review 1 (1961).

[§] See, *e.g.,* John Brehm & Wendy Rahn, *Individual-level evidence for the causes and consequences of social capital*, American journal of political science (1997); Stephen Knack & Philip Keefer, *Does social capital have an economic payoff? A cross-country investigation*, The Quarterly journal of economics (1997); and Pamela Paxton, *Social capital and democracy: An interdependent relationship*, American sociological review (2002).

[¶] See generally, Nan Lin, Social Capital: A Theory of Social Structure and Action (2002) (setting out a range of case studies and summarizing analyses of the relationship between human capital and social capital).

[**] See, *e.g.,* International Labour Organization, Labour Statistics, *available at*: http://www.ilo.org/inform/online-information-resources/research-guides/labour-statistics/lang--en/index.htm; The World Bank, Social Protection and Labor Data, available at: http://data.worldbank.org/topic/labor-and-social-protection.

[††] See generally, Emma Seery & Ana Caistor Arendar, *Even it Up: Time to end extreme inequality*, Oxfam Report 7 (2014), *available at* https://www.oxfam.org/sites/www.oxfam.org/files/file_attachments/cr-even-it-up-extreme-inequality-291014-en.pdf; Branko Milanovic, Worlds apart: Measuring international and global inequality (2011); Sakiko Fukuda-Parr, *Reducing inequality–The missing MDG: A content review of PRSPs and bilateral donor policy statements*, 41 IDS Bulletin 1 (2010); Ayelet Shachar, The birthright lottery: Citizenship and global inequality (2009); Nancy Birdsall & Juan Luis Londoño, *Asset inequality matters: an assessment of the World Bank's approach to poverty reduction*, 87 The American Economic Review 2 (1997).

constraints on organized labor, and limits regulation—including and particularly of the financial sector—the one percent massively benefits. The repeal of Glass-Steagall resulted in the creation of powerful financial behemoths, which resulted in a concentration of financial benefits to the financial sector. The critical influences on the policy process are likewise reflected in the interest group politics of American society, which compete without restraint and demonstrate *de facto* limitations on the ideology of American pluralism, in light of the direct relationship between amounts of money spent and the likelihood of certain policy determinations by operational actors. Non-profit corporations are contributing to campaigns through Super PACs—now a regular part of US election processes—without disclosing the source of these funds. A term of art has been created to describe this phenomenon: "dark money".[*] A critical question is whether, under cover of American democracy, the political culture of the United States is gravitating toward a plutocracy, in which the system of governance is dominated by a minority of its wealthiest citizens.

It is important to note that radical inequality and the marked social and economic disparities which characterize it are not necessarily inevitable consequences of market forces. Indeed, across the last fifty years in particular, the private sector has been celebrated as a potential engine for social and economic development and a key driver of the global knowledge economy. However, the dangers inherent in an overly-powerful and unregulated private sector have long been apparent. One hundred years ago, American economist Thorstein Veblen asserted that a business professional is less a wealth creator and more an economic saboteur.[†] In Veblen's time, a range of wealthy elites in the US were subverting the implicit compact of the social democratic state. Reflecting on this phenomenon, President Theodore Roosevelt said, "…we had come to the stage where for our people what was needed was a real democracy; and of all forms of tyranny the least attractive and the most vulgar is the tyranny of mere wealth, the tyranny of a plutocracy."[‡] The elites of today are likewise undermining the social democratic state and its promise of social protections, reasonable financial regulation, progressive taxation, and a commitment to civil rights and equality. A range of authoritative commentators continuously point out that even the most acrobatic arithmetical exercises do not bear out that the explosive income generation at the top is trickling down to the tens of millions of American citizens at the bottom, and that it has in reality extinguished opportunities for Americans across employment, education, health and welfare, finance, security, energy, and ecology contexts.[§]

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* See, *e.g.,* Trevor Potter & Bryson B. Morgan, *The History of Undisclosed Spending in US Elections & How 2012 Became the Dark Money Election*, 27 Notre Dame Jl Ethics & Pub. Pol'y 383 (2013); Heather K Gerken, *The Real Problem with Citizens United: Campaign Finance, Dark Money, and Shadow Parties*, 97 Marq. L. Rev. 903 (2013).

† Thorstein Veblen, The Engineers and the Price System 38 (1921; New York: Harbinger, 1963).

‡ Theodore Roosevelt, An Autobiography 464 (1913).

§ At the global level, Oxfam has pointed out that "Far from trickling down, income and wealth are instead being sucked upwards at an alarming rate. Once there, an ever more elaborate system of tax havens and an industry of wealth managers ensure that it stays there, far from the reach of ordinary citizens and their governments." *See* Oxfam, *An Economy for the 1%: How privilege and power in the economy drive extreme inequality and how this can be stopped*, Oxfam Briefing Paper 210, at 3 (January 18, 2016), *available at*: http://www.oxfamamerica.org/static/media/files/bp210-economy-one-percent-tax-havens-180116-en_0.pdf *See also,* Era Dabla-Norris, et al., *Causes and Consequences of Income Inequality: A Global Perspective*, International Monetary Fund 7 (2015), *available at*: http://www.imf.org/external/pubs/ft/sdn/2015/sdn1513.pdf (finding an "inverse relationship between the income share accruing to the rich (top 20 percent) and economic growth. If the income share of the top 20 percent increases by 1 percentage point, GDP growth is actually 0.08 percentage point lower in the following five years, suggesting that the benefits do not trickle down").

With the global financial crisis of 2008 only a few years behind us and in light of continuing speculation about another on the way,[*] the circumstances under which the private sector can harm rather than help social and economic development have again come to the fore of the global development discussion, and Veblen's meditations have a contemporary relevance. This is because Veblen's observations in 1904 and the realities of the 21st century are part of the same conventional paradigm, which has failed either to recognize the flaw of deregulation or to meaningfully do something about it. A new paradigm for the political economy of shared prosperity, to eliminate radical inequality as a mission—critical step toward the achievement of sustainable development, is clearly needed. It will require a thorough review of the fundamentals of the neo-liberal economic model and a reasoned and deliberate move away from its failed methods and its lack of concern for the social consequences of its theoretical inadequacy.

3. Unpacking a process to develop a New Theory of Sustainable Development

The political economy of neoliberalism has given us an economic process which accelerates radical inequality. Radical inequality destroys the critical foundations on which economic and political sustainability rest and is self-reinforcing in its disabling effect because it radically subverts the economic value of human capital, which undermines freedom of opportunity, which further extinguishes capability. There can be no sustainable economy if radical inequality continues to dominate the global political economy.

Oxfam has demonstrated the shortcomings of economic models focused particularly on wealth acquisition by famously calculating that as of 2015, the world's 62 wealthiest people collectively have the same total wealth as one-half of the total human population: the world's 3.6 billion poorest people.[†] The organization has thus emphasized that "from Ghana to Germany, South Africa to Spain, the gap between rich and poor is rapidly increasing and economic quality has reached extreme levels…the consequences are corrosive for everyone. Extreme inequality corrupts politics, hinders economic growth, and stifles social mobility. It fuels crime and even violent conflict. It squanders talent, thwarts potential, and undermines the foundations of society."[‡]

Much is indeed needed to achieve a theory toward a comprehensive and effective sustainable development paradigm, including the following considerations:

- *Socio-Economic Development*: How can a range of global actors simultaneously prioritize complementary support for peace- and state-building activities, with an emphasis on

[*] Indubitably, China's fortune has waned since its gargantuan economic growth boom earlier this decade. China's surge in economic debt and decline in economic growth resembles much of the initial indicators of the 2008 global financial crisis, indicating a potential impending crisis for the super economy. *See* The International Monetary Fund, *Global Financial Stability Report*, IMF Survey (April 13, 2016), *available at*: http://www.imf.org/en/News/Articles/2015/09/28/04/53/sopol041316a.

[†] See Oxfam, *An Economy for the 1%: How privilege and power in the economy drive extreme inequality and how this can be stopped*, Oxfam Briefing Paper 210, at 2 (January 18, 2016), *available at*: http://www.oxfamamerica.org/static/media/files/bp210-economy-one-percent-tax-havens-180116-en_0.pdf.

[‡] Emma Seery & Ana Caistor Arendar, *Even it Up: Time to end extreme inequality*, Oxfam Report 7 (2014), *available at*: https://www.oxfam.org/sites/www.oxfam.org/files/file_attachments/cr-even-it-up-extreme-inequality-291014-en.pdf

"inclusive political settlements, security, justice, jobs, good management of resources, and accountable and fair service delivery?"[*]

- *Employment*: How can global food security, full employment, and abolition of poverty be achieved within a decade?
- *Energy*: What does practicable, sustainable green energy look like, which combines responsible government and private sector action for transformational energy generation? How can an exponential growth in local technical expertise be achieved, lest any energy assets created be at risk of accelerated deterioration and thus stymie or undo energy transformations?[†]
- *Ecology*: How can global living standards be raised to middle class levels without depleting or destroying the environment or depriving future generations of the capacity to sustain these achievements?
- *Human Capital – Equality, Education, Health and Welfare*: How can global levels of education and public health be raised to OECD level? Inequality severely limits efforts to rid the world globally of extreme poverty—how can sustainable equality be achieved?
- *Finance*: How can the necessary financial resources be generated and mobilized to achieve the goals described in the first three questions?
- *Security*: How can we permanently eliminate war and weapons of mass destruction (WMD) which threaten to destroy all other development achievements?
- *Governance*: How can we design and implement systems of global governance capable of implementing necessary measures to achieve the other five goals for the welfare and well-being of all?

But do the SDGs account for these considerations effectively? Concerns about the substance of the SDGs and what they will measure have been voiced by a range of authoritative commentators. For example, Charles Kenny, a senior fellow at the Center for Global Development, has asserted that the creation of the SDGs was characterized by "overwrought and obese drafts proposed by negotiating committees [which] so far almost ensure that the post-2015 goals will have comparatively limited value and impact."[‡] Similarly, the International Council for Science (ICSU) and the International Social Science Council (ISSC) released a 2015 analysis of the 169 SDG targets and asserted that only 29% are "well-developed"; that 54% "could be strengthened by being more specific"; and that 17% "require significant work".[§] For example, the authors find SDG 16—popularly called the "governance goal"—"overly timid", stating that "the way…SDG [16] is formulated, narrowly emphasizing justice,

[*] See g7+, Fragility Spectrum (2013): "Fragility is a period of time during nationhood when sustainable socio-economic development requires greater emphasis on complementary peacebuilding and state building activities, such as building inclusive political settlements, security, justice, jobs, good management of resources, and accountable and fair service delivery."

[†] See Hazel Henderson, *The Politics of the Solar Age*, (2015)."Green transition is powered by fundamental shifts in human perspectives leading to paradigm shifts in science, academia, governance, leadership, finance, business, social norms, communications and network structures."

[‡] See Charles Kenny, *MDGs to SDGs: Have We Lost the Plot?*, Center for Global Development (May 27, 2015), *available at*: http://www.cgdev.org/sites/default/files/CGD-Essay-Kenny-MDGs-SDGs-Have-Lost-Plot.pdf.

[§] International Council for Science, International Social Science Council, Review of Targets for the Sustainable Development Goals: The Science Perspective (ICSU, 2015, *available at*: http://www.icsu.org/publications/reports-and-reviews/review-of-targets-for-the-sustainable-development-goals-the-science-perspective-2015/SDG-Report.pdf).

accountability and inclusion, is arbitrary and disconnected from research on how governance affects sustainable development." The authors conclude that "SDG 16... falls short of what the evidence suggests is needed…[and] because the SDG 16 elements point a spotlight overwhelmingly on poor countries, whereas the broader set of governance targets require action universally, the choice of targets undermines the overarching ambitions of the goal."

"Achievement of a new paradigm would depend on operational participants who authentically recognize that the management of political economy is a matter of human choice and decision, and not a matter of meta-physical speculation."

In light of these considerations, what are the necessary elements of a new paradigm of sustainable development? In short, legal theory provides robust guidance for the development of a comprehensive and effective sustainable development paradigm to augment economic theory, and to better facilitate the achievement of a new paradigm. Such a theory must be:

- Contextual, i.e., it must perceive all features of the social process of immediate concern in relation to the manifold of events comprising the relevant whole;
- Problem-oriented;
- Multi-method; and
- Interdisciplinary, with a focus on the dynamics of global interdependence and global inter-determination.

To qualify as a new paradigm, it follows that fundamental change would need to happen. Achievement of a new paradigm would depend on operational participants who authentically recognize that the management of political economy is a matter of human choice and decision, and not a matter of meta-physical speculation; who acknowledge centrality of human capital as the prime concern of responsible economics; who recognize the need to balance freedom of contract and responsible regulation toward more and better economic accountability and improved choices for the common good; who examine and clarify the base values of the concepts of free market and command economies; who prioritize the complementary promotion of liberty, equality, security, social justice, conservation, and responsible production.

4. Conclusion

The notion of global political economy is coterminous with the idea of a global sustainable political economy; a new paradigm of sustainable economy should include precepts for a new paradigm for sustainable development, and be focused on how effective and controlling decisions are made and put into effect in the public interest of all social participants. Unpacking this public and private decision-making is a necessary first step

toward understanding the creation and the distribution of the values which underpin the policy process of the conventional paradigm, and the development of a theory of sustainable development.

"Approaches to resolve challenges are subject to conflicting claims, priorities and interests, for which concerted efforts at reconciliation are necessary."

Lessons emerged for the development of a theory of sustainable development, which is itself a further step toward the achievement of a new global paradigm which transcends narrow disciplinary boundaries, emphasizes open access to new knowledge and facilitates the availability of new tools and technologies for sustainable human productivity, embraces the primacy of interrelated and interdependent implementation of sustainable development solutions and eschews partial or sectoral approaches, surfaces, implements, and celebrates global solutions and coordinated actions by the international community, and recognizes that approaches to resolve challenges are subject to conflicting claims, priorities and interests, for which concerted efforts at reconciliation are necessary.

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The Participants: Building on a break-through conference at the University of California at Berkeley in 2013, the World University Consortium and the World Academy of

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* Implement student-centered, person-centered, active, participative learning pedagogies;
* Harness the potential of emerging learning technologies and delivery systems;
* Foster synthetic, integrated modes of thinking;
* Make conscious and explicit the central role of values in human development;
* Shift toward multi- and trans-disciplinary approaches to knowledge;
* Development of independent thinking, creativity, entrepreneurship & leadership;
* Extend the scope of learning outcomes from information and mental skills to encompass development of social capabilities, personality, values and individuality.

The Format: This conference is designed to serve as an open, active platform for participants to share, collaborate and co-create new ideas, approaches, methodologies and best practices. The multi-stakeholder approach and structure of the conference will make it possible for participants to organize or participate in special sessions dedicated to in-depth exploration of specific topics ranging from subject content, pedagogy and learning technologies to social and economic impact on issues such as employment, skills development, business development, innovation, social power, citizenship, cultural diversity, personal development and individuality.

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* Learning in a time of increasing uncertainty
* Closing the time warp in higher education
* Education for Full Employment and Human Welfare
* Education distributes Social Power
* Transdisciplinary Education
* Person-centered learning
* Mind, Thinking & Creativity
* Anticipation in Education
* Developing Individuality through Education
* Learning as a way of life
* Value-based vs. Value-free education
* Social construction of knowledge
* Network-based education, learning spaces and learning communities

* Online and hybrid learning
* Disruptive educational technologies
* Technological enhancements, automation and digitization
* Storming the Ivory Tower
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Special Notice to WAAS Fellows

"The S&S Guide offers a unique and invaluable glimpse of 1,500 mostly non-profit organizations of global interest—more than half begun since 2002. Especially note some 80 information portals, and nearly 100 alliances, consortia, and networks."

– Ted Trzyna (WAAS Fellow; Editor, World Directory of Environmental Organizations, 6th Edition 2001; President, Inter-Environment Institute, Claremont, Calif.)

The Security & Sustainability Guide:

1,500 Organizations Pursuing Essential Global Goals

Prepared by Michael Marien, David Harries, and Michael Sales

A 277-page August 2016 Interim Draft PDF of The S&S Guide, a project of the World Academy of Art & Science, was distributed to WAAS Fellows last fall. A new Interim Draft of some 330 pages, with expanded coverage of 1,800 organizations, will be available in June 2017 at www.securesustain.org. It reflects the critical fact that sustainability and security are both essential and can only be achieved in concert. The Guide is incomplete, but the compilers believe that, even in its current state, many WAAS Fellows will find it useful for illuminating many of the most serious problems facing humanity under the broad, overlapping categories of "Security" (weapons proliferation, terrorism, cyber-attacks, economic and food insecurity, human rights, peacemaking, crime and corruption, inadequate infrastructure, etc.) and "Sustainability" (climate change, biodiversity loss, pollution, energy, agriculture, population growth, cities, oceans, forests, vulnerability to disasters, green economics and finance, etc.)

The August 2016 draft of the S&S Guide features the following:

- Forewords by **Heitor Gurgulino de Souza** and **Garry Jacobs**
- Part 1: ***Overviews***
  - A. Major Categories Index (a quick orientation to key topics and # of orgs. under each)
  - B. 100 Notable Books and Reports (mostly recent and freely-available online reports)
  - C. 50 Notable Organizations (briefly described)
  - D. 25 Notable Individuals (to be added in 2017-2018)
  - E. 80 Information Portals (to various security and sustainability topics, e.g. climate)
- Part 2: ***Title Index*** to 1,500 organizations (more to come; suggested additions invited)
- Part 3: ***Organization Descriptions*** (400 orgs. with links to the Title and Subject Indexes)
- Part 4: ***Subject Index*** (already extensive—some 60 double column pages!)

For a free PDF of the S&S Guide, contact WAAS Fellows **Dr. Michael Marien** (mmarien@twcny.rr.com) or **Dr. David Harries** (jdsharries@bell.net). Comments on this work in progress are encouraged; also suggestions for funding to make this project sustainable.