

Contours of New Economic Theory

Garry Jacobs, Chief Executive Officer, World Academy of Art & Science; Editor, Cadmus Journal; Vice-President, The Mother's Service Society social science research institute, India.¹

Abstract

The need for a paradigm change in economic thought has been well established, but the contours and fundamental characteristics of a new paradigm in economic theory are yet to be worked out. This article views this transition as an inevitable expression of the maturation of the social sciences into an integrated trans-disciplinary science of society founded on common underlying principles, premises and processes. It calls for evolution of human-centered, value-based economic theory whose objective is to maximize human economic security, welfare and well-being rather than economic growth. It emphasizes the determinative role of fundamental creative social processes expressing in all fields of human endeavor. It argues for extending the boundaries of economics to encompass the entire gamut of political, legal, social, psychological, intellectual, organizational and ecological factors that directly and indirectly contribute to economic security, welfare and well-being. The article concludes with a list of anticipated practical implications.

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¹ garryjacobs@gmail.com

1. Need & Scope of New Economic Theory

The objective of this colloquium is to explore alternative visions of sustainable development and alternative economic theories that more effectively translate economic activity into sustainable models of economic security and equitable development for humanity as a whole. The seemingly modest objective implies the need for radical change in economic thought and policy. It acknowledges the fact that current theory and policy is inconsistent with the goal of sustainable development for all human beings. Current theory is focused on the narrow objective of economic growth rather than the broader inclusive objective of meeting human needs and aspirations for survival, security and development. Current theory is preoccupied with enhancing economic performance in the here and now with little consideration for its impact and implications for the future. Fulfillment of this apparently modest objective would have momentous consequences for humanity.

A century ago the science of Physics passed through a critical evolutionary transition which established the foundation for remarkable theoretical achievements and practical applications during the 20th century. A “New Physics” emerged which placed all the partial discoveries of the past in a new and wider perspective. Relativity Theory framed the outer boundaries of the infinite macrocosm within which the fixed laws of Newtonian Physics operate and beyond which their truths are no longer valid. Quantum Mechanics zoomed into the infinitesimal microcosm, uncovering the inner world of uncertainty, complexity and interactivity which underlies the apparent stability and predictability of everyday material reality, decomposing particles into wave-fields of energy and confirming the linkage between objective and subjective dimensions of reality. Though still far from mature and complete, the reframing of Physics has already led to new processes and technologies of immense power and practical importance to humanity.

Today there are multiple indications that the science of Economics is approaching a similar critical transition point. Though far less mature than the science of Physics was a hundred years ago, the failure of current theory to effectively address the pressing economic problems confronting humanity today compels us to challenge the conventional assumptions and boundaries of Economics and press for wider and deeper formulations with greater effective power to serve humanity in the 21st century.

Economics has failed to generate effective policies for the eradication of poverty, generation of full employment, economic security or ecological sustainability.

Equally compelling is its failure to provide a viable path for fulfillment of humanity's unrealized aspirations, leaving an entire generation of youth frustrated, discouraged and confused. Mainstream Economics remains caught in a polemic, dialectic debate between opposing schools of thought which cling to outmoded conceptions and insist on confining inquiry within narrow conventional boundaries, which are themselves a primary source of their insufficiency.

The consequences and side effects of these failures have practical repercussions that are retarding and undermining the nascent emergence of global peaceful co-existence, the functioning of democracy, the political integrity of states, the stability of societies, the psychological security of people everywhere, and the preservation of the physical environment. The geocentric model of the universe served fairly well as the basis for constructing calendars and explaining the motion of sun, moon and planets, but it was a totally inadequate basis for a wider and deeper understanding of our place in the universe and for recent technological achievements in telecommunications and space travel. However, useful these concepts have been for specific purposes and limited applications, the simple truth is the economic theories and models do not match or even approximate economic and social reality and human needs in the 21st century.

This harsh assessment is not intended as a wholesale rejection of existing economic thought, any more than the discoveries of Relativity and Quantum mechanics constituted a refutation of classical Physics. Rather the purpose is to establish the need for new thinking outside the boundaries of prevailing economic theory and to point to some essential elements and likely lines of its future development.

2. Natural and Social Sciences

Nor is the intention to single out Economics for criticism. The need for new thinking more generally applies to all fields of social science. This should not be surprising. The natural sciences have at least a 200 year head start over the social sciences in formulation of a cohesive and

integrated view of the fields they study. Inter-disciplinarity has become an inherent characteristic of the natural sciences since each is based on the same fundamental laws and principles. The same laws of Physics and Chemistry are incorporated and applied in widely diverse fields such as biology, physiology, meteorology, oceanography and ecology. Whereas each of the social sciences operates in a hermetic space based on its own principles and assumptions about the nature of humanity and society.

Moreover, the complexity of material phenomena pales into insignificance before the greater complexity of human phenomena. Physics and Chemistry are concerned only with the interplay of material structures, forces and processes; whereas the human sciences must take into account the intricate interrelationships and interactions between physical, biological, subconscious and conscious mental, political, economic, technological, social and cultural factors. As anthropologist Margaret Mead emphasized, the universality of human nature is subject to wide cultural variations and the typology of human psychological characteristics constantly confronts unanticipated expressions of individuality and uniqueness unknown in lower orders of life and material nature. Every electron and every atom of iron or gold possesses the same characteristics and patterns of behavior, but every human being, social activity and structure is powerfully influenced by a plethora of factors that defy generalized assumptions. For this reason the attempt to reduce the social sciences to the mathematical precision of material sciences has led social scientists to overlook the rich variety of human phenomena and seek to compress them into the straightjacket of mechanistic, materialistic particles and processes.

3. Shifting Boundaries of Economy

The increasing speed of social evolution has added significantly to the challenge confronting all fields of social science in myriad ways. First is the changing nature of economic activity itself. Modern economic thought was born at the beginning of the Industrial Revolution. It was strongly influenced by the notion that industrial production consisting of units of product produced for a measurable cost and sold at a specific point in time constitutes the mainspring of economic activity. As Orio Giarini has long argued, with the rise of the modern service economy – which now constitutes the largest portion of economic activity – these fundamental

assumptions are less and less valid.¹ He pointed out that the service economy is not an outgrowth of the industrial economy but rather a system which permeates that structure, making it predominately depend on the performance of service functions both within and outside the production process. These service functions are far more dependent on quality of human and social capital and other intangible resources than those of the industrial economy.

A change in the concept of economic time is one of the important implications of the shift from manufacturing to services. In the service economy, many economic events no longer lend themselves to point-in-time analysis. Major fields of the service sector – financial services, education, healthcare, telecommunications, transport – consist of huge national and international systems with high fixed costs delivering services over a prolonged period of *utilization time* that begins in the distant past with fundamental research long before commencement of service delivery and extends far into the future before disposal, remediation and full assessment of risks and liabilities can be reliably determined. The emphasis of the industrial economy on physical processing of finite measurable objects at particular points in time is progressively being replaced by an emphasis on managing risks and uncertainty over an indefinable time-span.²

Monetization represents another invisible boundary line which has restricted the scope of mainstream economics and limited its capacity to directly address issues of human security and welfare. Economics emerged at a time when society was far less integrated than it is today. Agriculture remained the principal economic activity until late in the 19th century and a large portion of it was production for self-consumption rather than trade. By one estimate only about fifteen percent of productive activity was monetarized at the time when *Wealth of Nations* was published. Modelled after the quantitative physical sciences, economic thought focused only on the monetarized sector, which lent itself to measurement. Neither then nor now does the monetarized sector adequately reflect the whole impact of human activity on economic welfare. Rather its failure to take into account deducted costs, including the non-monetarized resources consumed in the process of generated monetarized wealth, makes it a grossly inadequate and deceptively misleading basis for promoting real welfare and well-being.³ For example, rising levels of water pollution has spawned a \$60-80 billion

bottled water industry, an increase in monetarized activity that partly reflects declining human welfare due to pollution, rather than higher standards of living.

The focus of economic study must encompass all activities that impact on the primary objective, including those in the non-monetarized household sector. Indeed, the two sectors are in constant interaction and there is a continuous shift of values between them. Rising levels of participation by women in the work force increases the monetarized sector two-fold, by converting the housewife into a paid worker and by transforming some housework from unpaid family labor into paid services provided by others. The total amount of work done may remain the same and quality of life may actually be diminished, but the shift to monetarization records a positive gain.

Rapid globalization has introduced another factor compelling a fundamental rethink of Economics. It has shifted the boundaries of economic thought and policy from the nation to the globe. The notion of national economies governed by national level public policies and relating to the rest of the world through semi-porous membranes is less and less relevant to an increasingly interconnected world in which trans-national corporations, global markets, and the growing realization that all human beings on the planet must live together, share resources and accept collective responsibility for managing the global commons.

4. Value-based Science

The natural and social sciences differ in another very significant way. 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. Whereas the notion of immutable Newtonian laws of nature has no place in the social sciences, which study the world and behavior of conscious human beings, whose habits and propensities are at least partially subject to conscious choice, which can change over time, can undergo voluntary modification and conscious evolution.

All scientific inquiry begins with a study of phenomena as it exists to understand its characteristics, structures and the processes by which it functions. Science then proceeds to examine and experiment with ways of

utilizing this knowledge to harness or alter these characteristics and processes for the benefit of humanity. However, in the natural sciences, the ultimate standard for evaluating knowledge is the extent to which it conforms to reality, regardless of whether that knowledge has any practical applications or benefits to humanity. Whereas in the social sciences, the primary role of the social scientist is to discover the means to alter those principles and processes or create new ones that more effectively fulfill human needs and aspirations.

Philosopher of science Karl Popper acknowledged that social science can learn scientific method from the natural sciences but cautioned against *misguided naturalism*. He argued that practical success, not just theoretical understanding, must be primary in the social sciences. He emphasized the ethical dimension of social sciences -- called for moral responsibility for 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 for all people.

Knowledge in the social sciences must be judged principally in terms of its efficacy in fostering human welfare and well-being. The objective of New Economic Theory (NET) is to formulate the 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. Economic security ensures the 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. The objective of economics is not production for its own sake or economic growth for growth 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 to achieve the primary objective stated above.

Values are not merely utopian ideals or ethical principles. They are the highest abstract mental formulations of governing life principles with immense power for practical accomplishment. They represent the

quintessence of humanity's acquired wisdom regarding the fundamental basis for human survival, growth, development and evolution.

At the beginning of the 20th century, Julius Rosenwald joined a small Midwestern Chicago mail order house. One of his first acts was to replace the prevalent commercial doctrine of "Buyer Beware" with a radically new corporate policy "Satisfaction guaranteed or your money back". Within 20 years, the value of unconditional customer satisfaction propelled the growth of Sears Roebuck to the position of the largest retailer in the entire world." A century later this value has become the global standard for successful business." Values are ideas which possess the power of practical wisdom.

A new economics will need to re-examine and redefine many of the fundamental values on which the discipline is based. Central importance will necessarily be accorded to those factors which contribute to enhancing the welfare and well-being of human beings. The values on which NET is based should be universally recognized human values, including

1. Respect for Humanity – the inestimable value and unlimited developmental potential of the human being. Human welfare is the central objective. Human capital is the most precious and indispensable resource for achieving it.
2. Economic rights – the inherent right of every human being to economic security, welfare and well-being
3. Inclusiveness -- economic security and welfare for all human beings
4. Sustainability – protection of the environment and ensuring the equal rights of future generations
5. Freedom of choice – maximum individual freedom for initiative and choice compatible with the welfare of the entire collective
6. Equity & Fairness – equal protection of rights and equal opportunity for all
7. Peace and social stability – an economy that promotes peace, stability and social harmony
8. Rights of the human collective – the resources of earth belong to humanity as a whole and should be utilized for the benefit of all

5. Hermetic Knowledge

Fragmentation of the social science disciplines is another compelling justification for a reframing of economic thought. The human quest for knowledge naturally proceeds from the observation of the specific and gradually broadens into the study of increasing concentric circles of generality. Mind exercises its power of concentration to examine the particular and then correlate in thought its relationship with other objects and events. Thus, the evolution of the natural sciences began with the observation of isolated phenomena – the motion of planets, properties of gases, circulation of blood – and gradually extended to the quest for more general laws of nature applicable to all phenomena of a particular type – physical, chemical, astronomic, biological, etc. The very success of this endeavor led to a proliferation of separate disciplines and an increasing tendency toward specialization. The greater the specialization, the greater the tendency to lose sight of the interconnections between different types of phenomena outside the narrow field of specialization. Thus, Political Economy evolved into many specialized branches of Economics tenuously bound together and increasingly divorced from one another and the wider political, social, cultural, psychological and ecological context within which all economic activity takes. *While Reality is one and indivisible, scientific knowledge became increasingly divided, multiple and fragmentary.*

Sporadic efforts to overcome the barriers of hermetically divided disciplines led to many commendable efforts to promote interdisciplinary and cross-disciplinary studies. But a combination and intermixture of disciplinary perspectives is insufficient. Human beings and society do not lend themselves to be manufactured like the subassemblies of an automobile which are then combined together to form a finished working product. The human being cannot be subdivided into a political man, economic man and social man. Each human being is an integral whole in which all these dimensions are inseparable and interdependent, like the circulatory, respiratory, digestive, nervous and muscular systems of the human body. Society cannot be validly segmented into airtight political, economic and social compartments. Nor can it be reduced to a set of separate but interacting subsystems.

In the field of economics, the intellectual gulf created by disciplinary fragmentation has resulted in a practical gulf between institutions – the

division and divorce of financial markets from the real economy, the divorce of employment from production, the divorce of economy from ecology, and the divorce of economy from governance, social welfare, and social stability. NET must necessarily widen the boundaries of economic theory to encompass governance, social welfare, culture and environment.

US President Franklin D. Roosevelt fully understood this when he addressed the American people just after he assumed office at the height of the banking crisis in March 1933. The failure of 6000 banks was not simply an economic problem and could not be addressed by a purely economic remedy. An infusion of funds to bolster failing institutions would not be sufficient. Radical political and legal action was necessary to alter the entire framework within which banking took place. Moreover, he had to restore the social confidence of Americans in their economic capacity and the psychological confidence of individuals in the trustworthiness of their financial institutions. FDR fully understood the inseparability of objective and subjective dimensions of reality, which quantum physicists were just beginning to puzzle over.

Society is an integral whole and can only be fully and effectively grasped by a knowledge which is integral. Thus, the primary objective of new economic theory must necessarily be inclusive of all human activities that impact on economic welfare, rather than arbitrarily confining its scope to the narrow field of direct economic activities. Equally, it needs to abandon the insistence of materialistic science on regarding human phenomena in mechanistic terms that deny or disregard the central place of subjective human perceptions, aspirations, values, attitudes and beliefs. The illusory barrier between the objective and subjective dimensions of human social reality has to be breached and give way to an integral conception.

The greatest scientific discoveries have been those which led to the unification of apparently disparate, unconnected phenomena within a wider, integrated framework. Newton's laws unified motion and inertia. Maxwell's electromagnetism unified magnetism and electricity. Einstein unified space and time, gravity and acceleration. The continuous battle between the contradictory positions of market fundamentalism and public regulation are currently viewed as contradictory, mutually exclusive perspectives. In reality individual freedom and social justice are

complementary values that can be truly fulfilled only when they are reconciled at a deeper level. Human accomplishment is a harmonious product of synthesis between individual and collective effort. Individuals create, innovate and act most effectively in freedom, but the greatest and best results have always been achieved only when they interrelate, cooperate, work together and organize harmoniously for the mutual betterment of all. Organization necessitates effective rules and regulation.

The apparent conflict between freedom and regulation can be reconciled by a knowledge of the fundamental process of human energy conversion that governs all human accomplishment. All individual and social achievement involves the release of human energies, the focusing and direction of those energies into force, the channeling of that force through organizational structures and systems to generate effective power, and the conversion and expression of that power as individually and socially beneficial results.⁴

Effective social theory cannot be achieved merely by fostering inter-disciplinary and cross-disciplinary perspectives and study groups. It is necessary for all social sciences to join together in search of knowledge of the underlying and unifying trans-disciplinary principles and processes governing human interactions and society as a whole. One premise of the work of The World Academy of Art & Science is that the evolution of new economic theory can contribute largely to the evolution of a trans-disciplinary science of society.⁵

6. Contours of New Economic Theory

Until now the development of science has been a long, slow process proceeding by tiny incremental steps interspersed with sudden, radical, evolutionary leaps. The implications of the shift from geocentric to heliocentric theory, which fundamentally altered our view of the entire universe, are still being worked out four centuries after Copernicus' heretical conception. It took a full century after the publication of Darwin's *Origin of the Species* for Watson and Crick to discover the actual genetic mechanism for physical inheritance. Even today the full potential of the nascent science of genetics is only beginning to be realized. Nearly a century after the initial formulations of Quantum Theory by Planck, Einstein and Bohr, the fundamental nature of matter is

still fraught with mystery. But in all three cases, the science that has emerged from these radical transitions is almost unrecognizably different from that which preceded it. Expanding the boundaries of knowledge not only increases but fundamentally alters our perception of what is already known.

It may be many decades before a newly formulated economic theory reaches even a moderate stage of maturity achieved by various branches of the natural sciences, but it is reasonable to assume that the new science of Economics which ultimately emerges will differ as radically from what we know today as the uncertainty principle, quantum entanglement, wave function collapse, quantum field theory and complementarity differ from the classical 18th century conceptions. Long before that stage is reached, we can reasonably expect NET to make concrete contributions of immense practical significance to the practice of Economics by enhancing our knowledge of both the fundamental processes by which wealth creation is generated in the microcosm of individual and social behavior and in the macrocosm of global society. It is much too soon to predict what this future science will become. This paper attempts merely to suggest some of the most likely changes in the basic concepts and boundary lines that define the yet to emerge discipline of NET.

Objectives

Contemporary Economics is replete with implicit assumptions that are commonly mistaken for established facts. NET should commence by making explicit the discussion and debate regarding the fundamental premises on which it is based. The most fundamental premise must be an explicit statement regarding the objectives of economic science.

The primary objective of economic activity must be the enhanced economic security, welfare and well-being of the entire global community, present and future, rather than production or growth for their own sake, whose net contribution to human welfare can and often is negative.

Human welfare directly encompasses a wider range of material and social needs related to safety, health, education, social security and indirectly encompasses political stability, democratic rights, social justice and development of individual and social capabilities. The soundness of

economic theory and policy must be evaluated in terms of its contribution to attainment of these wider social objectives. Persistent poverty, youth unemployment and rising inequality are incompatible with human security, welfare and well-being for all.

Individual well-being encompasses higher level social, cultural, psychological and spiritual aspirations for freedom of choice, respect, free association, acquisition of knowledge, enjoyment, creative self-expression, individual development and self-realization. An economic system that promotes rising levels of personal insecurity, lack of opportunities, employment and increasing concentration of wealth and social power is incompatible with this objective.

Premises

NET should make explicit the wider social context within which economic activity takes place and the fundamental social concepts and processes applicable to all human activities. The partial list of premises given below includes factors that fall outside the traditional boundaries of formulated economic theory, although virtually all are implicitly recognized as determinates of economic performance. Each of these premises points to a factor that actually impacts on the nature and results of human activity in the real world. Each possesses immense potential power for enhancing or diminishing economic performance.

- Like Newtonian Physics, contemporary Economics is centered around and largely confined to the middle ground between the human microcosm and macrocosm. As in the case of Physics, we are likely to discover in future that the regions which lie beyond the boundaries of current theory contain untold power for enhancing economic performance, as our study of atoms and stars has revealed untold sources of material energy. 'Newtonian Economics' is characterized by a quest for precision and certainty for control, whereas NET will shift the emphasis to risk assessment, management of uncertainty and unleashing of dynamic social processes in an effort to maximize human security and accelerate creative social transformations.

- Economic activity and wealth creation are specific expressions of a more general human capacity for conscious, purposeful behavior of individual human beings within a wider organized social collective.
- The principles of initiative, innovation, creativity, development and evolution occurring in the field of economic activity are expressions of fundamental human capacities for accomplishment, growth, development and evolution.
- The energy that fuels economic activity is one expression of the fundamental human energy that is the driving force for all human development. All human accomplishment involves the conversion of human energy into results by a common process.⁶
- Economy is a subset of society. Therefore the optimum performance of the economy depends on the fullest development and optimal operation of all other sectors and aspects of society, e.g. education, healthcare, law, governance, etc.
- Each individual is an infinitely complex and qualitatively unique microcosm with the potential to beneficially relate and support the entire society. The eminent philosopher of science Karl Popper stressed the centrality of the individual in the social sciences which has been largely ignored by scientific formulations of economics (and most other social sciences today). While history is replete with tales of remarkable individual accomplishment, social science has not yet fully recognized and come to terms with the central and transformative role of the individual as the catalyst for all social advancement. In practice, economics deals with the potential of individuals primarily by creating advocating a policy environment that encourages entrepreneurship. But this represents only a fringe of the potential for stimulating wealth generation. In practice we frequently observe the remarkable power of a single individual to change the world economically by generating enormous wealth, founding new industries, creating new products and services, developing the

social network and delivery system, and other tangible economic benefits for society at large. Edison, Morgan, Henry Ford, Julius Rosenwald, Alfred Sloan, Fred Smith, Bill Marriott, Steve Jobs, Larry Page, Mark Zuckerberg are just a few of a countless number of outstanding individuals at different levels and in different places whose momentous contributions are practically ignored by contemporary economic science. NET must restore individuality to a central place in theory and practice.

On October 31, 1907 J. P. Morgan gathered a group of bankers in a locked room demanding they pool another \$25 million to finance commitments to prevent massive payment defaults and panic selling on the New York Stock Exchange. The money arrived just in the nick of time to finance transactions during the last hour of the day's trading. Without any official authority, Morgan leveraged his reputation for integrity and the personal trust his colleagues had in him to save NYSE, leading financial institutions and the entire US banking system from collapse.⁷

- Society is an infinitely vast and complex macrocosm which attains its greatest creativity energy for accomplishment by nurturing and supporting the fullest development and self-expression of every one of its individual members.
- Society is a complex social organization capable of directing and converting that energy into effective power to maximize human welfare and well-being. 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 in a social system that promotes maximum synergy, cooperation and harmony between individuals, communities, nations and humanity as a whole.⁸
- The fundamental unit of economic activity, like that of all purposeful human endeavor, is the individual act which is linked together with other acts to form chains of activity, coordinated and standardized to constitute systems, organized into specialized functions and layers of authority,

which are linked together into formal organizations and informal networks, all of which function within wider fields of economic, political, social and cultural activities and institutions.

- Each individual act in itself a complex microcosm composed of and influenced by conscious intentions, aspirations, motivational energy, values, ideas, knowledge, opinions, attitudes, interests, impulses, sensations and habits that influence every human action.
- The characteristics and capabilities of any economic system depend on the development of these other spheres and the relationship of economy to other forms of social activity. The following linkages are of particular importance to the functioning of economy: peace and security from external threats and interference; a representative system of governance that maximizes the welfare of the entire social collective rather than restricting privileges and powers to an élite or moneyed class; a legal system that maximizes freedom to individuals while balancing it with equity and fairness to all others; an educational system that supports fullest development of the knowledge, skills and capacities of all its citizens; an accessible, affordable health care system that promotes the physical and mental health of all citizens; a social system that encourages fullest development and self-expression of the individual and accords freedom, recognition and rewards for outstanding achievement; and a cultural milieu that promotes values of independent thinking, enterprise, innovation, risk-taking, cooperation, responsibility, integrity and selflessness in relations between its members.

7. Resources

Resources are factors which human beings recognize as having the potential to contribute to value and wealth creation. Human mental awareness of that potential is the essential determinate of a resource. Changes in that awareness alter the productive potential of a resource. This implies that something becomes a resource only when and in the

measure the human mind recognizes it as such and that development of the mind's scientific and creative capacities has the potential to continuously enhance the productive potential of those things it comes to regard as resources.

NET should be based on a wider conception of resources that includes not only natural capital (land, minerals, forests), financial capital, and man-made capital (cities, factories, infrastructure), but also human and social forms of capital (human energy, attitudes, organizations, institutions, networks, systems, customs), mental or intellectual capital (knowledge, skill and technology), cultural capital (values and customs) and psychological capital (creative aptitude and capacities of individual members).

This wider conception has implications that need to be explicitly examined:

- Sustainable development can best be achieved by the progressive shift in dependence from physical resources to social and human forms of capital.
- Physical resources may be subject to inherent limits, but there is no inherent limit to the capacity of society to enhance the productivity with which those resources are utilized by the fuller development of human and social capital, knowledge, technology, social organization and skill.
- Society is a resource of unlimited productive potential derived from the interactions, exchange, association and cooperation among its members through informal and organized activities, rules, laws, procedures, systems and institutions. Anything that facilitates or increases the ease and frequency of relationship between people has the potential to enhance overall social productivity.
- There are no inherent limits to the mental and psychological capacity for development, knowledge, creativity and innovation of the individual or the collective.

Agriculture was invented about 8000 BC when the human mind recognized that the effects achieved by Nature could be reproduced by systematic planting of crops on empty land. As a result arable land came to be regarded as a precious vital natural resource. Ten millennium later it was realized that the empty space on a webpage located in cyberspace had vast productive potential as a place for advertising. When Sergey Brin and Larry Page launched an innovative new service for small advertisers called Adwords in 2000 by linking user search terms with related advertiser offerings; they revolutionized advertising and began the development of Google into a \$69 billion corporation in 2014, of which \$59 billion was derived from advertising revenue.

The view put forth in this paper is that the validity of social science must be judged in terms of its impact on human beings. It must be human-centered in its objectives and values. But it also supports the conclusion of the World Academy that effective economic theory must shift its basis from an inordinate reliance on financial and technological capital to recognition of the central role of Human Capital – individual and social – as the ultimate source and motive power of all wealth creation, welfare and well-being. Other forms of capital – natural, technological, organizational and financial – are functions of human capital – of the mental development, ingenuity and social inventiveness of human beings. Technology and financial capital dominated economic thought during the 19th century when a massive concentration of wealth was required for investment in physical infrastructure and huge industrial enterprises and labor was largely regarded as a dispensable resource measured in horse power. In the still emerging knowledge-based service economy, the human capital and social institutions will be the primary drivers and determinates of real economic development.

8. Process of Wealth Creation

Economic theory must necessarily be premised on a conception of the process of wealth creation. NET can draw valuable insights by tracing the stages of the evolution in humanity's capacity for wealth creation. The following list illustrates various aspects of the process of wealth creation, many of which are ignored by conventional economic policy but which

powerfully contribute to economic development and have immense untapped potential for further enhancing human welfare and well-being.

- Observation of natural processes enhances humanity's capacity to promote its welfare and well-being, e.g. observing the places and seasons where food grows, animals graze or fish swim. Observation spurs human thought. Thought is the process of linking a relating and coordinating two or more facts by a common principle. Close observation of Nature led human beings to first conceive of the possibility of imitating and improving on natural processes for food production, giving rise to the birth of animal husbandry and later agriculture.
- Production and transformation of resources by individuals and groups of individuals working in tandem makes possible achievements that no individual can achieve by his or herself. Division and specialization of function and skill among individuals and groups within a wider system of cooperation enables multiple tasks to be performed simultaneously and higher levels of skill to be developed and transferred.
- Exchange among individuals and groups that enables each to produce in excess of their personal need, on which they have a comparative advantage and exchange it for other goods and services produced or obtained by others. Exchange between individuals, organizations and groups over a wider geographic area enhances the incentives for maximum individual production and expands the range of goods and services for which each individual can exchange what he produces.
- Development and application of tools, technology and know-how have always been associated with humanity's economic and social advancement – from the club, lever and knife to the most sophisticated mechanical and electronic devices, technology has been central to human social evolution. Yet it is only during the early 20th century that science-based R&D became an essential and integral part of business development. Economic thought still lacks a coherent theory

designed to maximize the process of human invention, innovation, creativity, imitation and adaptation.

- Human relationship and interconnectivity has always been the essential basis and driving force for economic development. Greater ease, extended geographic reach, growing frequency, increasing variety, complexity and integration of human interactions is a primary source of wealth creation. Social organizations enhance the effectiveness of human relationships. The invention of new technologies for social organization has been at least as important as – arguably more so – the invention of physical tools and processes. Among the most powerful have been the organizational technologies we call language, cities, markets, money and the Internet. These in turn have led to a plethora of offshoots and specialized social institutions such as wholesale and retail outlets, commodity exchanges, stock markets, warehouses, etc.
- The invention and widespread introduction of various forms of money to facilitate exchange of products, movement of capital, and storage of value marks an important stage in the evolution of economy. Yet inadequate attention has been given by all the social sciences to the properties and wider role of money as a social institution, the sources of its unique power, its capacity for inter-convertibility of economic power with other forms of social power, and its tendency to dominate them.
- Regulation is an inherent power of society essential for the full development of any activity. Informal activities, cooperation and exchange between individuals and groups acquire far greater power when supported and governed by an effective system of laws, regulations, procedures and standards to protect the rights of individuals and groups involved.
- Integration refers to the highest level of organized interrelationship in which each part, aspect, system, organ, activity, process and dimension interrelates and adapts to every other part of the whole, as illustrated by the perfect integration of the organs, systems and processes of the human

body. The development and integration of technical education to support agricultural and industrial development in 19th century America was a major factor in the sudden and dramatic rise of the US to global economic prominence. The potential for further enhancing the levels of coordination and integration between different factors is given even greater impetus by the rapid pace of social evolution today and its potential is virtually unlimited. NET needs to take fully into account the integration of economic activities with activities related to law, governance, technological and scientific development, education, social relations, and cultural values.

In sum, wealth creation is a function of the whole society and depends on every other major and minor aspect of society, including political stability, freedom, rule of law, justice, transparency, social attitudes and behaviors, cultural values and attitudes, organizational and institutional capabilities, scientific and technological advances, education and training, protection and restoration of the natural environment.

Pixar was founded by George Lucas in 1979 to manufacture specialized computers and software for producing animated special effects and animated films for the motion picture industry. In 1986 Lucas sold Pixar to Steve Jobs for \$10 million. At a time when the company was bleeding money and drastically cutting production and employment, the head of Pixar's film division asked Jobs for \$300,000 to make a three minute animated video about talking toys to be used to demonstrate the efficacy of the company's products. Although the investment seemed risky and frivolous in view of the company's failing fortunes, Jobs took the plunge. Pixar soon stopped making computers and joined forces with Disney to produce *Toy Story*, the first in a series of blockbuster computer-generated movies. In 2006 Jobs sold Pixar to Disney for \$7.4 billion^{9,10}

9. Social power

Wealth creation is not the sole or necessarily the most important determinant of economic value as defined in this paper in terms of human economic security, welfare and well-being. The human impact of the capacity of the society to produce goods and services is very largely dependent on and governed by the overall exercise of power in society.

Power is the capacity to do work of any kind. Social power is the capacity to accomplish objectives within a social context. It is the capacity of human collectives for accomplishment in any field. Our capacity to access and disseminate information instantaneously, communicate around the world, visit other countries safely and with minimum ease, circle the globe in less than 80 hours instead of 80 days, make purchases and enjoy the latest entertainment from the comfort of our home, obtain world-class medical treatment and latest technologies, participate in selection of our political leaders and vote on new legislation are a few expressions of the incredible power society imparts to citizens today.

Social power represents the sum of the political, legal, economic, financial technological, organizational, educational, scientific, cultural and other powers of the society that enable it to achieve the objectives it sets for itself, as reflected in its capacity for self-defense, transport, communication, production, exchange, education, health, discovery, invention, entertainment, etc. All these forms of social power are transferable and inter-convertible.

This conception vastly expands the theoretical and practical instruments for wealth creation by viewing them within an integrated framework. It explains why improved physical infrastructure of roads, faster communication, improved public health, higher levels of relevant education, a sense of security from external threats, higher levels of confidence in public institutions and leaders, greater individual freedom and opportunity contribute to the overall power of a society to promote human security, welfare and well-being. It also explains why every society today is performing far below its full productive potential.

A vital distinction needs to be made between potential and actual social power and between productive and destructive applications of that power. The productive power of an economy can be properly evaluated in terms of its capacity to generate human economic security, welfare and well-being for its citizens, present and future, in a manner that also promotes the security, welfare and well-being of other human beings outside its sphere of direct influence. The inability of an economy to fully develop and harness the actual and potential productive capacities of its people, social organization, knowledge and technology in such a manner is an expression of incapacity, wrongly or destructively directed power. High levels of unemployment and underemployment, low levels of education

and vocational skills, concentration of wealth and purchasing power and political influence among a small minority whose capacity to meet its own economic needs is supersaturated are expressions of this inability. The full economic and social potential of a society can only be realized when all forms of social power are widely distributed and made readily available to all human beings, locally, nationally and globally.

The gap between potential and actual economic and social power depends on the way in which power is governed and distributed in society. All factors that limit the development, restrict the distribution or concentrate the accumulation and use of power to a section of society limit the overall power of the society to a fraction of its real potential. An authoritarian elitist state controls power for the benefit of a small ruling class. Corruption and plutocratic democracy restrict the real exercise of power to a wealthy minority. An economy dominated by large corporations restricts power to a few commercial institutions with strong political backing. A system of taxation that fosters rising levels of income and wealth inequality increases the effective power of the richest with the minimum need and incentive (psychological power) for wealth creation and limits the incentive of the majority with the greatest need and unfulfilled aspirations. A society with low levels or poor quality of education limits power to an educated class. Suppression of women and minorities, casteism, racial and religious prejudice and other forms of social-cultural discrimination confine power to dominant groups.

NET should incorporate within its purview all those factors which contribute to the development and utilization of positive, productive forms of social power to promote human security, welfare and well-being. Physical security, peace and protection, freedom of expression and action, rule of law, guarantee of fundamental rights (including the right to food, minimum needs and gainful employment), access to education and information, broad-based decentralization and uncentralization of authority as on the Internet, ease and speed of movement of all descriptions, flexible and responsive organizations, increasing intensity of human relations and institutional linkages, respect for the right to differ and dissent, tolerance for non-conformity, encouragement for innovation and creativity are factors with unlimited potential for enhancing individual and social productivity, economic security, welfare and well-being.

10. Money

Money is a social organization and networking tool. It ranks alongside language, agriculture, cities and the internet as one of the most creative and important of all human inventions and a powerful instrument for the evolution of society. But like all human inventions, it has the capacity to serve and promote human welfare or dominate and destroy our freedom and undermine our security. Today the instrument dominates its creator resulting in gross distortions and perversions of our social existence. A fuller consideration of the remarkable characteristics of this social invention and its relevance to NET are considered elsewhere.^{11,12,13} Only a few observations will be made here.

Regrettably social science has considered money only in the narrowest sense of an economic tool and left its study almost exclusively to the purview of conventional economic theory. The raging struggle in Europe today over monetary policy places inordinate emphasis on central government debt and inflation and overlooks the essential role played by money in the effective mobilization and utilization of other social resources, inflicting untold costs in terms of lost productivity and creativity, diminished human security and welfare. The understandable aversion to extreme levels of debt has nearly obscured the remarkable ingenuity and sound underlying principle of debt as an instrument for development. Indeed, the collapse of the Roman Empire has been attributed to the fact that the principle of public debt was unknown at the time.

The notion of debt limits is based on a convention amounting to superstition, rather than sound theory. Relating appropriate levels of debt to GDP is an unsound comparison of a stock with a flow. A more appropriate basis for measuring debt would be the total productive value and potential of assets in the country. Policies that restrict the development and utilization of those productive assets are inherently counter-productive. The euro controversy highlights the inextricable linkage between monetary power and political power and provides compelling evidence of the need for a more integrated perspective and social structure in which money creation, fiscal policy and public welfare are the common responsibility of the same government.

Financial markets which were conceived to support development of the real economy now destabilize that economy and divert resources from real wealth creation to accumulation of negative social power. Beyond its utilitarian economic function, money plays a central role as an instrument of social and political power which involves fundamental issues regarding democracy and social equality.

The stark contrast between contemporary theory and NET can be illustrated by their dealing with the phenomena of inflation. The prevailing orthodoxy that inflation is a negative phenomena has almost acquired the sanctity of universal law. Extreme instances of hyperinflation, the abhorrence of wealthy lenders and the popular resentment of the middle class electorate are cited as self-evident confirmations. The root cause of inflation as an expression of the irrepressible human aspiration for upward social mobility and its historical importance in transforming violent revolution into peaceful social evolution are ignored. Rational social science must rise above the dogmas and prejudices of prevailing beliefs and objectively examine inflation, public debt and similar phenomena at the level of first principles, rather than superficial appearances or anecdotal evidence.

11. Towards NET

Contemporary Economics possesses valuable insights into many aspects and dimensions of economic activity and powerful analytical tools useful for a wide variety of specific applications, which will continue to be of value after economic theory has evolved far beyond the present boundaries, just as Newton's and Boyle's laws continue to hold true after the advent of Relativity and Quantum Theory. The validity of what now exists is not a valid argument for maintaining the status quo, just as the deficiency of current theory is not a valid argument for rejecting all that is of proven utility. That said, it is still important to try to envision the ways in which future theory will markedly depart from what now pertains.

It is indeed difficult to fully imagine the contours, let alone the complete content, of NET and the other social sciences which are yet to emerge. Nevertheless, it may be possible to glimpse some of the ways in which they will differ from mainstream social science as we know it today. It is ironic that the nearest distant approximation may be found in the field of

management science, which is barely and very hesitantly accorded the status of a science by other social science disciplines. However imprecise, imperfect, anecdotal and lacking in quantitative supporting evidence it is today, the 'science' of Management may be the closest thing we now possess to a complete and effective trans-disciplinary social science. At the very least, it may provide us with an indication of the future directions in which other social sciences need to evolve.

Organization is the central principle of Management Science. Most theoretical and applied research focuses on the structure and functioning of the commercial and non-commercial organizations in their relation to the individual persons who work within them, the activities they perform, the processes and systems they utilize, the wider world of stakeholders with which they interact and relate, and the more general environment – commercial, economic, legal, political, social, cultural and ecological – within which they exist and operate.

Successful organizations of any description must necessarily take into account and address all these levels and dimensions of 'reality' in theory or at least in practice. The most successful are those that consciously conceive and perceive the relationship between these different aspects and view them as aspects of a single integrated whole – an organization consisting of individuals, functions, systems and activities internally coordinated and integrated with each other and also related, coordinated and integrated to differing degrees with the wider social system and environment of which it is a part.

Successful theoreticians and organizational leaders are cognizant of the fact that the overall performance of an organization depends on both the development and the integration of these three organized dimensions of reality – the psychological organization of the individual microcosm, the social organization of the collective macrocosm and all the levels of organization in between – individual department, firm, agency or other entity, industry, local or national economy, etc.

Successful leaders are also conscious of the fact that the rigid boundaries between financial, economic, political, legal, scientific, technological, social, cultural, psychological and ecological factors are purely conceptual. There are no dividing boundaries – only interrelated aspects of a single integral reality. No company can exist and function

independently from the market, legal context, social and cultural environment within which it operates.

Furthermore, however abstract and lifeless it may appear when depicted on an organizational chart or matrix or mechanistic diagram of interrelated systems, functions and processes, successful organizational leaders are also conscious of the fact that an organization is alive – a living organism -- activated by human energy and aspirations; directed by conscious and subconscious intentions (ideas, values, beliefs, opinions and attitudes); combining individual action with coordinated collective activities; governed by an intricate combination of personal authority and impersonal rules and procedures; expressing that energy and intention in an organized manner through knowledge, skills and technology to produce results.¹⁴

Management Science necessarily comprehends and strives to take into account theoretically and practically the contributions to value addition of knowledge, skill, structure, systems, networks, authority, information, communication, rules, procedures, laws, leadership, power, process, procedure, cooperation, coordination, integration, internal harmony among individuals, external relations with individuals, other institutions and the wider social environment.

From this perspective Management may be regarded as the most complex, integrated and effective social science related to wealth creation. It places central emphasis on purposeful human behavior and social processes, rather than impersonal laws of economics. It is human-centered, recognizing the central role of human intention, awareness, knowledge, skill and motivation. It encompasses market, technology, finance, organization and people within a comprehensive organizational framework. It integrates the individual, organizational and social dimensions of human activity. It recognizes the importance of both objective material and environmental factors and subjective perceptions and attitudes of people inside and outside the organization. It is global in scope without limitation by national boundaries. It consciously acknowledges and founds theory and practice on the central place of values in human performance.

12. Practical Implications of NET

It is far too early to assert with confidence the full implications and impact of NET on human economic security, welfare and well-being, but it is similar in magnitude to the consequences of the evolution of Physics during the 20th century. At this point we can only point out a few of the more obvious ways in which it is likely to make a considerable difference:

1. NET can provide theoretical justification for recognition of gainful employment as a fundamental human right and essential condition for full exercise of economic rights in a market economy, the equivalent of the right to vote in democracy. Creating all the essential conditions to access and capacity to obtain remunerative employment of every citizen who seeks work is the optimal strategy for maximizing economic security for all, at least to the extent that social security systems are unable to fully disengage economic welfare from dependence on employment.
2. NET will support a more fundamental shift in thinking from the preoccupation with the quest for precision and certainty which characterize the efforts of 'Newtonian Economics' for control to an emphasis on risk assessment, management of uncertainty and unleashing of dynamic creative social processes in an effort to maximize human security and accelerate positive social transformations.
3. NET can lead to the development of new types of tools to measure human economic security, welfare and well-being and sustainability. The gross inadequacy of existing measures such as GDP has been well-documented and widely discussed. Yet in spite of widespread criticism, the use of GDP as a proxy for economic progress is commonly relied upon by economists and other policy makers. GDP registers in positive terms economic activity that results from destructive activities such as war, arms exports, rising costs of domestic security and policing, natural catastrophes, crime, rising medical costs and the drug trade, which reflect a deterioration in human welfare and should be deducted rather than added to national product. A measure of economic activity (flow) rather than wealth

(stock) fails to take into account positive and negative changes in the total of natural and other forms of capital: thus, the depletion of non-renewable natural resources is valued at the cost of extraction or current demand without taking into account replacement value. GDP makes no distinction between revenues from speculative financial transactions that benefit the top one percent and production of essential goods and services that benefit the masses. Other implicit and largely uncontested premises relate to the value of advanced labor-saving technologies, the value of capital accumulation and savings, unrestricted market access, intellectual property rights and public debt. The Human Economic Welfare Index (HEWI) was developed in 2010-11 by Ivo Slaus and myself to illustrate an alternative quantitative index based on a modification of GDP.¹⁵

4. NET can restore the rightful place of money and financial markets and eliminate the theoretical justification for speculative financial activities that undermine global human welfare.
5. NET can resolve the incessant debate regarding the apparent contradiction between private interest and public good by reconciling them within a larger formulation of human security, welfare and well-being that takes full cognizance of the mutual interdependence between these two aspects of social reality. The creative individual is the catalyst for all social innovation, development and evolution. The development and evolution of the collective ensures the greatest possible distribution of benefits to its individual members. NET can best be founded on a conception that recognizes these two dimensions as mutually complementary rather than mutually antagonistic.
6. NET can foster the development of institutions and policies at the global level designed to foster the economic security, welfare and well-being of all human beings in all countries as the optimal strategy for the operation of the global economy and an essential requirement for the fulfilment of the full range of humanity's political, social, cultural and psychological aspirations. Maximizing economic security, welfare and well-being for all will also contribute to

maximizing the political, social, psychological and ecological security, welfare and well-being of all.

7. NET can compel a re-evaluation of current laws and public policies to determine their contribution and compatibility with the explicit aim of maximizing human economic security, welfare and well-being. This may include that which relates to natural resource rights beneath the surface of land, taxation of natural resource mining and consumption, law and taxes on pollution, the length of protection for copyrights and other forms of intellectual property, corporate campaign financing, tax rates on payroll and capital gains and on accumulation and inheritance of wealth, right to education and health care, etc.
8. NET must necessarily incorporate ecological factors in a manner that reflects the true cost of economic activities, assessed in terms of their value to present and future generations rather than the immediate costs of extraction and utilization. It needs to incorporate the concept of negative or deducted value to reflect the detrimental impact of pollution and ecological disruption on human beings and their physical and social environment.
9. At the same time, NET can lay to rest the theoretical debate about limits to growth by making evident the unlimited potential for the future development and evolution of human beings and society. Some natural resources are finite in quantity, exhaustible and non-renewable, but the potential resourcefulness of the human mind and imagination, which ultimately determines the productivity of those resources, is not, as Harlan Cleveland, past WAAS President and a leading member of the Club of Rome, so often insisted.
10. NET can provide theoretical and practical support for the evolution of truly representative, democratic institutions freed from the inordinate influence of money-power, which distorts, subverts and perverts public policy to serve a small élite at the expense of the public-at-large.

13. Notes

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- ¹⁰ David A. Price, *The Pixar Touch* (New York: Knopf Doubleday Publishing Group, 2008)
- ¹¹ Orio Giarini et al., "Introductory Paper for a Programme on the Wealth of Nations Revisited," *Cadmus* 1, no. 1 (2010): 16 - 18
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- ¹⁴ Cleveland and Jacobs, *Human Choice: The Genetic Code for Social Development*, 6-8
- ¹⁵ Garry Jacobs and Ivo Slaus, "Indicators of Economic Progress: The Power of Measurement and Human Welfare," *Cadmus* 1, no. 1 (2010): 53 - 113