NO BYSTANDERS ANY LONGER: SOCIAL SCIENCES, SOCIAL RESPONSIBILITY AND SUSTAINABILITY RESEARCH IN AN EMERGING REVOLUTION

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ABSTRACT

This paper argues that sustainable development in thinking and in practices is the beginning of a revolution, a major societal paradigm shift, which eventually will match the industrial revolution in transforming social, economic, and cultural conditions. The first part of the article discusses several features of this revolution and what it shares with, and how it differs from, the industrial revolution. The second part of the article discusses the role that social sciences in general and sociology in particular can and should play in relation to the revolution of sustainable development, among other things, monitoring and data collection, analyzing, explaining, identifying and providing assessments of social impacts and related developments, but also of an ethically engaged research in sustainability problem-solving as well as policy analyses.

Key words: Sustainability; Paradigm Shift; Revolution.

INTRODUCTION

We are in the early stages of a new societal revolution where sustainability is one of the central components, and that it is comparable in scale and import to the industrial revolution (Ayers, 2011; Burns, 2012; Edwards, 2005; Neeman, 2011). Whether the "sustainability revolution" will be fast enough or comprehensive enough to save the planet remains to be seen. The article specifies the properties of the type of transformation currently taking place and compares two major instances of such transformation, the industrial revolution and the ongoing sustainability revolution. The article goes on to discuss the normative implications of the revolution and what it might entail for sociology and social science.

ORGANIC TRANSFORMATIONS OF SOCIETAL PARADIGMATIC AND INSTITUTIONAL CHANGE

How do major societal transformations come about, for instance in the case of systems of governance and regulation? Several mechanisms of societal change have been studied, such as power shifts that bring to power a group with a paradigm differing from the established paradigm; or when autocratic agents shift a paradigm or cognitive-normative framework for governance; or when paradigm shift take place due to external forces, for instance major change in material and social structural conditions. Yet another mechanism occurs under conditions of a pluralist distribution of powers where multi-agent negotiations lead to the establishment of a new paradigm that is an organic transformation (Burns, 2012; Burns and Hall, 2012; Carson et al, 2009, among others).

Organic transformation takes place through the diffusion of ideas, techniques, and technologies. These mechanisms of change are characterized by processes of diffusion and emulation (i.e. "mimetic function" in neoinstitutional theory) as well as bi- or multi-lateral negotiations under decentralized conditions in which a multiplicity of agents make autonomous yet similar decisions bringing about a transition to a new order.

The agents carrying the change are typically embedded in communication and other types of networks and influenced by a normative ethos. Also typically, the participating agents have no intention to bring about the global transformation that they together produce. It can be defined as a bottom up form of societal transformation, but this is misleading since the innovation and transformation processes involved are launched and developed at multiple societal levels, by collective agents that in some cases are rather large and globally active and cannot be understood as "grassroots".

The centrality of organic transformation is here underscored because of its centrality and extensivity in the sustainability revo-

lution. Below, we characterize the emerging sustainability revolution after a brief discussion of the "industrial revolution" in its early organic phases.

The early industrial revolution as organic transformation[1]

The industrial revolution entailed many small and medium initiatives in the emergence and transformation of technologies, institutional arrangements, social relations, and values such as those relating to the formation of factories, built environments, and entire industries. Such transformations could occur without any single agent or group of agents planning or even negotiating the overall pattern. It involved multiple agents initiating and developing a variety of innovative technologies and socio-technical systems (although later variants of industrialization such as in the cases of Germany, Japan, and the Soviet Union entailed more a top-down development guided by an overall design or blueprint). Inventors, innovators, entrepreneurs, engineers, business leaders, and government officials took a multitude of initiatives not only to make money but to gain fame and respect, to experience the power of changing and developing

themselves and the world around them, and tens of thousands were involved in these developments over the decades during which industrialization took off.

The transformations encompassed not only major innovations in technologies and technical systems, such as the invention of the steam engine, textile manufacturing, metal tools, optics, advances in transport, among other developments, but it was basically the shift from human/animal power to water and to coal.

Critical to all these technological advances was the development of governance arrangements –organizational and institutional means -- to utilize and develop the varying technical possibilities: e.g. methods to coordinate and control large numbers of workers, factory systems, ownership arrangements, regulatory agencies, legal innovations, mechanization and standardized mass production, and new research and educational organizations. In other words, there were not just machines and material technologies but organizational, legal, conceptual and normative innovations.

Almost all aspects of everyday life came to be affected. On the other hand, a perplexing characteristic of the early industrial revolution was that contemporaries were not fully aware of the profound changes their society was going through (Burns, 2012). Perhaps because the industrial revolution did

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[1]Industrialization became a "development" concept that was more than a description. It became as well a metaphor of progress and advancement and a powerful normative idea (to be "developed", "industrialized" was good, to be undeveloped or underdeveloped was backward, a failure).

not "happen" from one day to another but it was a series of events in a certain span of time. However those events triggered such enormous changes such as to qualify as a revolution. The industrial revolution marked a major turning point in history, implying a profound change in people's outlook, work and living patterns, lifestyles, and welfare.

The development of the industrial social order – with its technologies, experts, and governance and regulatory systems -- spread from England to North America and the rest of Europe and eventually to most corners of the globe.

The great success of the industrialization paradigm reinforced the idea that humans could ignore or, at least, overcome, environmental detriments and resource problems. Land, seas and rivers were exploited to the fullest for economic and related purposes, "unspoiled areas" would be defined as "wasted" and "should be effectively exploited" in the name of progress and "welfare."[2] Consequently and progressively, industrial society engaged in a reckless and extensive exploitation of nature. This was done on the basis of faulty assumptions and conceptions of real impacts and in many instances, in ignorance of long-term consequences. Nevertheless, and this also a result of the industrial revolution, opposition to many aspects of industrialization grew in a number of countries, for instance, in Europe and North America. For the workers, socialist and trade union movements emerged fighting for social protection, welfare, and justice.

Concerns for deforestation led to powerful reactions, and NGOs were founded to promote pockets of environmental protection, conservation and wildlife protection—a whole battery of policies, programs, and parks were established. These movements and the governance and regulatory developments they helped bring about, operated on many levels and with varying degrees of effectiveness.

The Emerging Sustainability Revolution

Today we are witnessing the early stages of a new societal revolution comparable in scale and import to the industrial revolution (Ayers, 2011; Burns, 2011; 2012; Edwards, 2005; Neeman, 2011). This "sustainability revolution" – sustainalization – implies a new paradigm of society – or family of societies. It is being forged, piece by piece ("organically", so to speak). Millions of people are considering and adopting new conceptions, goals, techniques, technologies, and

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[2]The USA's greatest dam-builder, Floyd E. Dominy, was involved in many of the initiatives in the Western U.S. that led to 472 dams. He aptly represented the "spirit of the times." In 1966, he called a Colorado River without dams "useless to anyone… I've seen all the wild rivers I ever want to see." (cited in New York Times (NYT) Obituary, "F.E. Dominy, who harnessed water in the American West, is dead at 100," page B 13, April 29, 2010).

everyday practices relating to a wide spectrum of environmental concerns and developments.[3]

From the 1960s there has been rapidly increasing global awareness and concern about damage to the environment – Rachel Carson's book (The Silent Spring, 1962), the UN Stockholm Conference on the Human Environment (1972), the 1987 Brundtland report (The World Commission on Environment and Development, Our Common Future), the 1992 and 2012 Rio de Janeiro "Earth Summits" (UN Conference on Environment and Development (UNCED)), and so on. The "Stockholm Declaration" was formulated at the 1972 Conference -- a number of guiding principles for the protection of the environment were adopted. These have been critical in the successive development of other instruments.[4]

Also starting in the 1960s, processes of defining threatening environmental realities, mobilizing agencies, enterprises, and citizens etc. have been taking place.[5] These processes relate to a cascade of private and public initiatives and accomplishments in addressing environmental issues and challenges. The UN, environmental agencies, many enterprises, public "intellectuals," researchers, NGOS, and specialized media have succeeded to a greater or lesser extent in convincing multitudes of people that the environment and human life as well as life generally are threatened on planet earth and action is necessary[6] - this is not to overlook the deniers and opposers who make for formidable resistance.

Masses of "sustainability" designs, plans, and initiatives at different levels have been developed as people try to forge new orders (local, meso-, and – macro). The sustainability revolution entails a new paradigm with associated norms of thinking, judging, and acting. This paradigm consists of a socially shared cognitive-normative framework - in values, norms, beliefs, and strategies – that at the same time encompasses new principles of social organization (Carson et al, 2009).[7]

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[3]This may sound counterintuitive when several authors inform us that policies and programs of sustainable development have failed to promote sufficient mobilization and action in most parts of the world, suggest that "sustainability" is mostly a discourse at the level of grand statements, congresses, advertising and policy agendas and rather not at the level of implementation (Alexander, 2005; Witoszek, 2012).

[4]Another important outcome of this conference was the agreement to create a new programme for global environmental protection under the United Nations: Then United Nations Environmental Programme (UNEP).

[5]Obviously, there was growing and widespread concern with conservation, environmental pollution and degradation long before there emerged a "sustainability" concept.

[6]Some instances of radical steps have been accomplished such as the EU chemical directive REACH (2006) in which Swedish EU agents and pressure groups played a significant role in realizing it over the opposition of the European, American, and Japanese chemical industries as well as the political leadership of Germany, France, and the UK (Carson et al, 2009).

[7]Any paradigm entails a type of "knowledge," although a

The new paradigm is a complex of concepts, principles, and models of sustainability, which represent the emergence of a new approach attempting to integrate sustainability and development, capturing the interactions between ideas, institutions, and organized actors engaged in social, political and administrative processes. The development entails a gradual shift from the economistic, industrialization paradigm to one or more forms of a sustainability paradigm entail the establishment of new ways of thinking, acting, organizing, and regulating (in part, the establishment of a new cognitive-normative discursive framework and context). Sustainability ideas, norms, and values permeate an ever-increasing part of modern life and have a significant impact on everyday thinking and practices in substantial parts of the world. This is occurring not only in developed countries but also in developing ones such as China, India, and Brazil (Burns, 2012).

These are some of its indicators[8]:

• Increasing stress on a sustainable normative perspective: that is, articulation and development of new values, norms, and standards: institutionalization of sustainable values and standards in decision and policymaking settings in government agencies, corporations, and associations. Increasing stakeholder involvement in the corridors of economic and policy-making power (e.g., Friends of the Earth, Greenpeace, WWF).

• New forms of environmentally sustainable governance: new regulatory mechanisms: distinguishing "good" and "responsible" (environmentally sustainable) versus "bad" (unsustainable/polluting) innovations and developments. Also new practices, for instance new accounting conceptions and standards such as "triple bottom line."

• The call for social justice - as one of the pillars of sustainability – increasingly associated by a sense of co-responsibility, particularly in what happens to our natural environment, both people as individual actors, and national and corporate agents (AXA, 2012).

• A growing environmentally sustainable thinking, conceptions, standards and practices in many areas of social life. Also, there are also increasing narratives about green ideas, values, and standards, which circulate in wider and wider circles.

• A "green-ethics": An ever-growing generalized consensus that environmentally sustainable developments are "good," and that patterns and developments which are "non-green" or even "anti-green" are "bad" (e.g., use of high gasoline consumption vehicles, overuse or wastage of water or other critical resources, etc.). This correlates with a strong ethical engagement.

knowledge that need not be necessarily correct or contribute to effective performance of the governance regimes.

[8] However, it is not fully possible to describe a paradigm that is still a work-in-progress.

• Increased consumption of eco-friendly/ecological products.

• Emergence of "green" entrepreneurs (they initiate projects based on their beliefs in a green future, opportunity for profitability, pressures of competition, or combinations of such motivators).

• Environmentally sustainable technological developments. New alertness and readiness to experiment or innovate with sustainable ideas, designs, technologies and practices.

• Massive experimentation with "environmentally sustainable" initiatives (accompanied by failures, of course). These concern businesses, NGOs, other private agents, government agencies, etc.

In the sustainability revolution we see hybrid cars, re-development of the electric car, solar energy innovations and other renewable energy developments, "smart switches," recycling systems, banning or promoting tighter regulation of chemicals, increased controls of many pollutants, movements to protect forests and threatened species.

These changes take place more in some parts of the world than others, but there is a powerful and sustained thrust, involving many thousands of initiatives and developments. The emerging social trend is manifested in the plans and actions of thousands of international regimes, international bureaucracies, national agencies, local and transnational activist groups and expert networks. At the same time, "earth system governance" can be understood as a political project that engages more and more actors who seek to change the current architecture of institutions and networks at local-,meso-, and global-levels in order to advance the cause of sustainability.

The new paradigm (or family of paradigms) is spreading readily – horizontally -- new knowledge, values, and practices. Moreover, it represents not one but multiple paradigm shifts, not only in production, technologies, consumption, and lifestyles, etc. but also in governance and practical ethics and related normative developments. Thus, there are related general socio-cognitive trends that extend beyond the ecological dimension:

• Accelerated development and increase in numbers of NGOs related to a new understanding of democracy, in particular participatory democracy

• A new cognitive orientation: due to several decades of globalization impacts – global networks, communication etc.- we see an increased awareness of systemic effects of economic decisions.

• This leading to an increased sensibility: notion of people in different parts of the world may suffer consequences not different from one's own.

• We see an expanding concern for proportion in personal life, at least as an ideal. A "good life" should entail a

more balanced equation between work, health, family and leisure, and between body and "mental" matters (Silo, 1991).

• Increased tolerance for the right of wild animals to survive, even to live close to cities (however, the notion of protecting their habitat in contradistinction to economic interests is not quite clear).

The "sustainability revolution" represents then multiple paradigm shifts, not only in production, technologies, consumption, and lifestyles, etc. but in governance, practical ethics and related normative developments. At this stage it may be neither coherent nor complete but even contradictory; the study and conceptualization of this paradigm shift is a major challenge to sociology and the other social sciences.

In sum, it is being suggested that a "sustainability revolution" is in all likelihood already taking place on multiple levels: (1) a moral-cognitive level; (2) a level of action and the establishment of new practices on the part of individuals, groups, and organizations; (3) an institutional level as "green" institutional arrangements and policies are promoted, often cautiously, but sometimes boldly – with varying degrees of success.

Organic Mechanisms: diffusion of values and aggregation

The emerging sustainability paradigm is being established by a process of multiple initiatives facilitated by diffusion of values, ideas, practices, and technologies through associations, communities, business, and political networks. There are not only values shifting -- and some reordering (still limited) of priorities, but governance changes, and changes in many daily practices.

The conditions of initiative and innovation encompass multiple agents who enjoy some power and means of structural control over their own situations and are able to make relatively autonomous independent decisions. This process results on an aggregate level in adaptations and shifts in the industrial paradigm complex and its particular institutional and cultural arrangements. The latter with its massive nexus is being challenged piece-by-piece by the sustainability paradigm.[9]

The transformation process is an organic one with many different agents at different levels driven by diverse motives and interests. Gradually, blueprints will be developed specifying standardized designs and strategies.[10]

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[9]The ongoing sustainability revolution is much more than a "Third Industrial Revolution" (see to Rifkin refers in a book (The Third Industrial Revolution: How Lateral Power Is Transforming Energy, the Economy, and the World) that has recently (2011) appeared. But significantly Rifkin recognizes the organic character of the transformative processes.

[10]Industrialization was also characterized first by such a highly organic phase and then later a more blueprint-like modality: where Germany, Japan, the Soviet Union, and others adopted and imposed an industrialization/modernization design (Mokyr, 1999).

It is not possible to define a precise moment of change or unique tipping point of transition in such a complex global process. Yet, there are spatial and temporal continuities, at the same time that in a larger perspective, transformation emerges accomplished through the "spontaneous", uncoordinated actions of many social agents at different levels and in different spheres. Although an organic revolution is not directed or determined at a global or macro-level, macro-institutional conditions and polices (forming a context) are likely to affect the course of the transformation, and may provide a certain directedness for many "spontaneous processes." On an aggregate level, there is an emergent development -- the diffusion processes resulting in transformations of a prevailing social order with its particular institutions, its established and legitimate agents, goals, and methods. This is characteristic of an organic revolution such as industrialization and the ongoing sustainability revolution.

Several key factors explain why the sustainability revolution is likely to continue and even to accelerate:

• Increasing scarcity of natural resources and continuing environmental crises (that will not go away). Also continual outpouring of critical analyses and prognoses about the current failings and hazards.

• Institutionalization and legitimation of the normative ethos, as well as collective pressures. Diffusion and imitation mechanisms through diverse social networks.

• Sustained creative challenge; the excitement of innovating, opening of new opportunities as well as thrilling risks and uncertainties.

• The paradigm shift itself entails new ways to frame, think, judge, and act that are challenges to be mastered and developed.

Important drivers and facilitators of the sustainability revolution are thus: (1) normative pressures and resource and power mobilization; (2) open, new sectors are able to develop quickly on green dimensions by utilizing new ideas, models, methods, technologies and techniques where there is often less resistance from, or resilience of established arrangements; (3) some strategic sectors – such as energy and chemicals – are subject to particular attention and pressures to transform themselves, because in the case of energy some forms such as fossil fuels are becoming increasingly scarce and also because these fuels contribute significantly to pollution, GHGs, and climate change.

Unique Features of the Sustainability Revolution

While the sustainability revolution shares the organic character of the industrial revolution, the two differ significantly in a number of ways, as

would be expected given their obviously very different historical, institutional, and cultural contexts as well as the difference in levels of scientific and technical knowledge.

- Complexity: sustainalization is taking place in a much more developed and complicated world in terms of networks of institutions, cultures, and technologies including of course communications; for instance, the infrastructures of agriculture, manufacturing, government, science, education, etc. are very different.

- The numbers and diversity of stakeholders and regulatory and governance systems that must be taken into account is much greater (partly a result of democratization and partly learning to deal with modern complexity).

- The modern world has its established expectations about consumption levels, lifestyles, health and welfare (this is also the case in developing countries)

- There are greater explicit concerns about issues of general welfare, justice, and human rights.

- And there is much greater awareness of systemic (and, of course, ecological) properties and unintended consequences.

In spite of the complexity and the many institutional and cultural as well as power constraints, sustainalization is likely to proceed much more rapidly than industrialization did in large part due to the availability of the resources and capabilities of modern science and technology; the availability of rapid and widespread advanced communications and networks facilitating the spread of sustainability ideas and accelerating rates of innovation and application; and the large numbers of people and collective agents already mobilized and acting to drive sustainability improvements and transformations.

While "sustainability" initiatives continue to grow and spread by the many tens of thousands, the ongoing transformation will be no walkover.

The development is taking place in the context of established social structures and power configurations and powerful vested interests and in many ways a historically successful industrialization/modernization paradigm. As indicated earlier, there is a formidable opposition (including deniers and opposers) among the powerful, for instance, many in the established industrial-commercial-banking complexes and their allies. The struggle will be long and difficult. Whether the sustainability revolution will be fast enough or comprehensive enough to save the planet remains to be seen. History provides numerous examples of great societies that collapsed, and visions that failed or were never realized.

THE CENTRALITY OF NORMS IN SUSTAINABILITY

The concept of sustainable development was coined in the UN Brundtland report, Our Common Future (WED, 1987). The power of this controversial concept was bringing together what had appeared to be incompatible issues: environmental imperatives, economic imperatives and social imperatives (Woods, 2012). It defined a development that meets the needs of the present without compromising (or jeopardizing) the ability of future generations to meet their needs [WED, 1987].[11] In the language of policymaking, it is described as the three pillars of sustainability: (a) environmental protection (b) economic functioning and prosperity, (c) social welfare and a just society.

The concepts thus entail a combination of different criteria, different values and norms and different institutional logics. An important challenge is to determine how one articulates, balances or combines these, particularly since under some conditions are contradictory at the present: economic growth versus environmental protection and conservation, or sustained growth versus distributive justice. That is, it would also need to take into account and integrate ecological, social and economic considerations into resource management decision-making. And this would involve new scientific and technical developments, for instance, the development of "ecological" and interdisciplinary social sciences as well as the management and policy sciences: a social science for sustainability.

No bystanders any longer: towards a sociology for sustainability[12]

We have described how the global sustainability crisis is driving a large piecemeal social mobilization and development, and how this is leading to a change of such an import that it can be termed as revolutionary. Actions for sustainability have a strong normative character, and entail a sense of shared responsibility and a call for concern if not outright commitment. Responsibility and commitment from states and business organizations are understood as "corporate social responsibility" in the production of

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[11]The Brundtland report (WED, 1987) stressed that perceived needs are socially and culturally determined, and sustainable development requires the promotion of values (standards) developing consumption standards within the bounds of the ecological possible. Moreover, the Report argued that economic growth is a necessity in developing countries, while it should be curbed in wealthy countries. Thus, issues of equity and distributive justice were raised.

[12]There is today a substantial body of work in the sociology of sustainability (Burns, 2013): From survey studies of attitudes and opinions towards environmental issues; lifestyles and consumption; environmental energy politics; social movements; among others), studies of regulation and governance; studies of alternative energy technologies and policies. However, this overview does not do justice to substantial and expanding work being conducted by sociologists everywhere in this area.

goods and services. Responsibility and commitment from citizens involve the change in lifestyle, such as change in consumption patterns, recycling waste etc.

Do we as social scientists have any social responsibility in this development? (See Abbot, 2007; Strydom, 1999). The International Sociological Association's Code of Ethics present us with a action standard in this regard "Sociologists work to develop a reliable and valid body of scientific knowledge based on research and, thereby, to contribute to the improvement of the global human condition" (http://www.isa-sociology.org/about/isa_code_of_ethics.htm). Our professional code statement highlights the role of sociology in contributing to a more humane society.

This implies a humanist agenda for a sociology for sustainability[13]. The agenda may entail research analyzing the complex linkages between humanization and complexity, a sustainability concept subsumed in the notion that all life on earth is systemic and interdependent (as opposed to independent or autonomous), within the framework of a global social and ecological system comprised of physical, biological and social components interacting in highly complex and non-linear ways, and with unintended emergent properties.

This would also imply a more reflective role on the global transformations now taking place, for example regarding the social/human dimension of the sustainability revolution, the implication of the change; "consequence analysis" of ameliorating policies, etc. (their agents, mechanisms, developments, unintended consequences, etc.). One may envision sociology aiming to develop a major policy analytic role in relation to sustainable development: identifying, monitoring, analyzing, and assessing social impacts in what already are complex social transformations in a manner similar to the role of sociology role vis-à-vis the industrial revolution.

Another important research dimension for a sociology responding to the sustainability crisis is the cultural dimension – practically absent from original Brundtland Report. Sociological analysis on culture are central in analyzing paradigmatic changes in sustainability. A cultural transformation towards sustainability could range from the redesigning of managerial incentive-structures, or analyzing cultural conditions for new forms of governance.

More fundamentally, the social sciences could providing what Andrew

[13]Pico de la Mirandola (1493-1494) in the Dignitiy of Man, upheld the key ideals of renaissance humanism: the inalienable right to dissent; respect for diversity (cultural, religious etc.); the right to learning and enrich life according to one's conscience (Pico de Mirandola, 1485/1959). Also can be subsumed in the following axiology: "Nothing above (wo)man and no (wo)man above another" (Silo, 2003).

Abbot's describes as the "deepest moral obligation of the sociological imagination" (Abbot, 2007), that is to generate a vision of what a sustainable and humane society would be and how it could be realized. This means in part providing a coherent worldview, "a lucid agenda and scenario of action" (Witoszek, 2012) but fundamentally a vision of a re-enchanted world.

In the analysis of industrialization and modernity, Max Weber used two interconnected metaphors to describe what he saw as their terrible downsides: the iron-cage, and disenchantment (Weber, 1993). Disenchantment purged magic from the core of the public sphere, but also eliminated much sense of transcendence (exception made of nationalisms and national movements) replacing it with the institutionalization of instrumentality and formal rationality in key social institutions. The iron-cage was the entrapment of elevating calculability, maximization of efficiency and predictability to highest organizational values. The risk was a more standardized, efficient system but also a compartmentalized and potentially dehumanizing society.

The normative and cognitive vision of a sustainable global planetary life, rather than an instrumental view of nature and people, can rekindle a new form of global and encompassing re-enchantment. And social sciences can contribute to it.

Whether the sustainability revolution will be fast or comprehensive enough to transform our societies and save the planet ecosystem remains to be seen. Many scientists and social sciences are pessimistic, and history has shown us that great societies have collapsed before. But as Edgar Mitchell wrote …"evolution has progressed such that we have to assume a large measure of conscious control in our own evolutionary process."

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