

The Empathic Civilization

—An Address Before the British Royal Society for the Arts—

By
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Part I:

Rethinking Human Nature and the History of the Human Journey on the Cusp of the Biosphere Era

Two spectacular failures, separated by only 18 months, marked the end of the modern era. In July 2008, the price of oil on world markets peaked at \$147/ barrel, inflation soared, the price of everything from food to gasoline skyrocketed, and the global economic engine shut off. Growing demand in the developed nations, as well as in China, India, and other emerging economies, for diminishing fossil fuels precipitated the crisis. Purchasing power plummeted and the global economy collapsed. That was the earthquake that tore asunder the industrial age built on and propelled by fossil fuels. The failure of the financial markets two months later was merely the aftershock. The fossil fuel energies that make up the industrial way of life are sunseting and the industrial infrastructure is now on life support.

In December 2009, world leaders from 192 countries assembled in Copenhagen to address the question of how to handle the accumulated entropy bill of the fossil fuel based industrial revolution—the spent CO₂ that is heating up the planet and careening the earth into a catastrophic shift in climate. After years of preparation, the negotiations broke down and world leaders were unable to reach a formal accord.

The problem runs deeper than the issue of finding new ways to regulate the market or imposing legally binding global green house gas emission reduction targets. The real crisis lies in the set of assumptions about human nature that governs the behavior of world leaders—assumptions that were spawned during the Enlightenment more than 200 years ago at the dawn of the modern market economy and the emergence of the nation state era.

The Enlightenment thinkers—John Locke, Adam Smith, Marquis de Condorcet et. al.—took umbrage with the faith based Medieval Christian world view that saw human nature as fallen and depraved and that looked to salvation in the next world through God's grace. Many—but, not all—preferred to cast their lot with the idea

that human beings' essential nature is rational, detached, autonomous, acquisitive and utilitarian and argued that individual salvation lies in unlimited material progress here on Earth. The Age of Faith was subsumed, at least in part, by the Age of Reason.

The Enlightenment notions about human nature were reflected in the newly minted nation-state whose *raison d'être* was to protect private property relations and stimulate market forces as well as act as a surrogate of the collective self-interest of the citizenry in the international arena. Like individuals, nation-states were considered to be autonomous agents embroiled in a relentless battle with other sovereign nations in the pursuit of material gains.

It was these very assumptions that provided the philosophical underpinnings for a geopolitical frame of reference that accompanied the first and second industrial revolutions in the 19th and 20th centuries. These beliefs about human nature came to the fore in the aftermath of the global economic meltdown and in the boisterous and acrimonious confrontations in the meeting rooms in Copenhagen, with potentially disastrous consequences for the future of humanity and the planet.

If human nature is as many of the Enlightenment philosophers claimed, then we are likely doomed. It is impossible to imagine how we might create a sustainable global economy and restore the biosphere to health if each and every one of us is, at the core of our biology, an autonomous agent and a self-centered and materialistic being.

Recent discoveries in brain science and child development, however, are forcing us to rethink these long-held shibboleths about human nature. Biologists and cognitive neuroscientists are discovering mirror-neurons—the so-called empathy neurons—that allow human beings and other species to feel and experience another's situation as if it were one's own. We are, it appears, the most social of animals and seek intimate participation and companionship with our fellows.

Social scientists, in turn, are discovering previously hidden strands of the human narrative which suggests that human evolution is measured not only by the expansion of power over nature, but also by the intensification and extension of empathy to more diverse others across broader temporal and spatial domains. The growing scientific evidence that we are a fundamentally empathic species has profound and far-reaching consequences for society, and may well determine our fate as a species.

What is required now is nothing less than a leap to global empathic consciousness and in less than a generation if we are to resurrect the global economy and revitalize the biosphere. The question becomes this: what is the mechanism that allows empathic sensitivity to mature and consciousness to expand through history?

The pivotal turning points in human consciousness occur when new energy regimes converge with new communications revolutions, creating new economic eras. The new communications revolutions become the command and control mechanisms for structuring, organizing and managing more complex civilizations that the new energy regimes make possible. For example, in the early modern age, print communication became the means to organize and manage the technologies, organizations, and infrastructure of the coal, steam, and rail revolution. It would have been impossible to administer the first industrial revolution using script and codex.

Communication revolutions not only manage new, more complex energy regimes, but also change human consciousness in the process. Forager/hunter societies relied on oral communications and their consciousness was mythologically constructed. The great hydraulic agricultural civilizations were, for the most part, organized around script communication and steeped in theological consciousness. The first industrial revolution of the 19th century was managed by print communication and ushered in ideological consciousness. Electronic communication became the command and control mechanism for arranging the second industrial revolution in the 20th century and spawned psychological consciousness.

Each more sophisticated communication revolution brings together more diverse people in increasingly more expansive and varied social networks. Oral communication has only limited temporal and spatial reach while script, print and electronic communications each extend the range and depth of human social interaction.

By extending the central nervous system of each individual and the society as a whole, communication revolutions provide an evermore inclusive playing field for empathy to mature and consciousness to expand. For example, during the period of the great hydraulic agricultural civilizations characterized by script and theological consciousness, empathic sensitivity broadened from tribal blood ties to associational ties based on common religious affiliation. Jews came to empathize with Jews, Christians with Christians, Muslims with Muslims, etc. In the first industrial revolution characterized by print and ideological consciousness, empathic sensibility extended to national borders, with Americans empathizing with Americans, Italians with Italians, Japanese with Japanese and so on. In the second industrial revolution, characterized by electronic communication and psychological consciousness, individuals began to identify with like-minded others.

Today, we are in the early stages of another historic convergence of energy and communication—a third industrial revolution—that could extend empathic sensibility to the biosphere itself and all of life on Earth. The distributed Internet revolution is coming together with distributed renewable energies, making possible a sustainable, post-carbon economy that is both globally connected and locally managed.

In the 21st century, hundreds of millions—and eventually billions—of human beings will transform their buildings into power plants to harvest renewable energies on site, store those energies in the form of hydrogen and share electricity, peer-to-peer, across local, regional, national and continental inter-grids that act much like the Internet. The open source sharing of energy, like open source sharing of information, will give rise to collaborative energy spaces—not unlike the collaborative social spaces that currently exist on the Internet.

When every family and business comes to take responsibility for its own small swath of the biosphere by harnessing renewable energy and sharing it with millions of others on smart power grids that stretch across continents, we become intimately interconnected at the most basic level of earthly existence by jointly stewarding the energy that bathes the planet and sustains all of life.

The new distributed communication revolution not only organizes distributed renewable energies, but also changes human consciousness. The information communication technologies (ICT) revolution is quickly extending the central nervous system of billions of human beings and connecting the human race across time and space, allowing empathy to flourish on a global scale, for the first time in history.

Whether in fact we will begin to empathize as a species will depend on how we use the new distributed communication medium. While distributed communications technologies-and, soon, distributed renewable energies – are connecting the human race, what is so shocking is that no one has offered much of a reason as to why we ought to be connected. We talk breathlessly about access and inclusion in a global communications network but speak little of exactly why we want to communicate with one another on such a planetary scale. What's sorely missing is an overarching reason for why billions of human beings should be increasingly connected. Toward what end? The only feeble explanations thus far offered are to share information, be entertained, advance commercial exchange and speed the globalization of the economy. But what if our distributed global communication networks were put to the task of helping us re-participate in deep communion with the common biosphere that sustains all of our lives?

The biosphere is the narrow band that extends some forty miles from the ocean floor to outer space where living creatures and the Earth's geochemical processes interact to sustain each other. We are learning that the biosphere functions like an indivisible organism. It is the continuous symbiotic relationships between every living creature and between living creatures and the geochemical processes that ensure the survival of the planetary organism and the individual species that live within its biospheric envelope. If every human life, the species as a whole, and all other life-forms are entwined with one another and with the geochemistry of the planet in a rich and complex choreography that sustains life itself, then we are all dependant on and responsible for the health of the whole organism. Carrying out

that responsibility means living out our individual lives in our neighborhoods and communities in ways that promote the general well-being of the larger biosphere within which we dwell. The Third Industrial Revolution offers just such an opportunity.

If we can harness our empathic sensibility and establish a new global ethic to harmonize the many relationships that make up the life-sustaining forces of the planet, we will have moved beyond the detached, self-interested and utilitarian philosophical assumptions that accompanied national markets and nation state governance and into a new era of biosphere consciousness. We leave the old world of geopolitics behind and enter into a new world of biosphere politics, with new forms of governance emerging to accompany our new biosphere awareness.

The Third Industrial Revolution and the new era of distributed capitalism allow us to sculpt a new approach to globalization, this time emphasizing continentalization from the bottom up. Because renewable energies are more or less equally distributed around the world, every region is potentially amply endowed with the power it needs to be relatively self-sufficient and sustainable in its lifestyle, while at the same time interconnected via smart grids to other regions across countries and continents.

When every community is locally empowered, both figuratively and literally, it can engage directly in regional, transnational, continental, and limited global trade without the severe restrictions that are imposed by the geopolitics that oversee elite fossil fuels and uranium energy distribution.

Continentalization is already bringing with it a new form of governance. The nation-state, which grew up alongside the First and Second Industrial Revolutions, and provided the regulatory mechanism for managing an energy regime whose reach was the geosphere, is ill suited for a Third Industrial Revolution whose domain is the biosphere. Distributed renewable energies generated locally and regionally and shared openly—peer to peer—across vast contiguous land masses connected by intelligent utility networks and smart logistics and supply chains favor a seamless network of governing institutions that span entire continents.

The European Union is the first continental governing institution of the Third Industrial Revolution era. The EU is already beginning to put in place the infrastructure for a European-wide energy regime, along with the codes, regulations, and standards to effectively operate a seamless transport, communications, and energy grid that will stretch from the Irish Sea to the doorsteps of Russia by midcentury. Asian, African, and Latin American continental political unions are also in the making and will likely be the premier governing institutions on their respective continents by 2050.

In this new era of distributed energy, governing institutions will more resemble the workings of the ecosystems they manage. Just as habitats function within

ecosystems, and ecosystems within the biosphere in a web of interrelationships, governing institutions will similarly function in a collaborative network of relationships with localities, regions, and nations all embedded within the continent as a whole. This new complex political organism operates like the biosphere it attends, synergistically and reciprocally. This is biosphere politics.

The new biosphere politics transcends traditional conservative/liberal distinctions so characteristic of the geopolitics of the modern market economy and nation-state era. The new divide is generational and contrasts the traditional top-down model of structuring family life, education, commerce, and governance with a younger generation whose thinking is more relational and distributed, whose nature is more collaborative and cosmopolitan, and whose work and social spaces favor open-source commons. For the Internet generation, “quality of life” becomes as important as individual opportunity in fashioning a new dream for the 21st century.

The transition to biosphere consciousness has already begun. All over the world, a younger generation is beginning to realize that one’s daily consumption of energy and other resources ultimately affects the lives of every other human being and every other creature that inhabits the Earth.

The Empathic Civilization is emerging. A younger generation is fast extending its empathic embrace beyond religious affiliations and national identification to include the whole of humanity and the vast project of life that envelops the Earth. But our rush to universal empathic connectivity is running up against a rapidly accelerating entropic juggernaut in the form of climate change. Can we reach biosphere consciousness and global empathy in time to avert planetary collapse?

Part II:

The Transition from the Age of Faith and the Age of Reason to the Age of Empathy

The British Royal Society for the Arts (RSA) can play a critical role in generating a much needed global conversation around rethinking human nature and preparing the groundwork for a globalized society in a biosphere era. We need only be reminded that the RSA performed a similar role over 200 years ago when it brought together theologians, philosophers, economists, political leaders, and social reformers in deep discussion around preparing a transition from a feudal society to the modern market economy and nation-state era, and from the Age of Faith to the Age of Reason. The Enlightenment recast our notions about human nature and the meaning of the human journey in fundamentally new ways that have continued to influence every aspect of modern life to the present century.

Today, however, at the outset of a global economy and the biosphere era, a new generation of scientists, scholars, and social reformers are beginning to challenge

some of the underlying assumptions of both the Age of Faith and the Age of Reason, taking us into the Age of Empathy.

The empathic advocates argue that, for the most part, both earlier narratives about human nature fail to plumb the depths of what makes us human and therefore leave us with cosmologies that are incomplete stories—that is, they fail to touch the deepest realities of existence. That’s not to dismiss the critical elements that make the stories of faith and reason so compelling. It’s only that something essential is missing—and that something is “embodied experience.”

Both the Abrahamic faiths—Judaism, Christianity, and Islam—as well as the Eastern religions of Buddhism, Hinduism, and Taoism, either disparage bodily existence or deny its importance. So too does modern science and most of the rational philosophers of the Enlightenment. For the former, especially the Abrahamic faiths, the body is fallen and a source of evil. Its presence is a constant reminder of the depravity and mortality of human nature. For the latter, the body is mere scaffolding to maintain the mind, a necessary inconvenience to provide sensory perception, nutrients, and mobility. It is a machine the mind uses to impress its will on the world. It is even loathed because of its transient nature. The body is a constant reminder of death, and therefore, feared, disparaged and dismissed in the world’s great religions and among many of the Enlightenment philosophers.

Most of all, the body is to be mistrusted, especially the emotions that flow from its continuous engagement with and reaction to the outside world. Neither the Bible nor the Enlightenment ruminations make much room for human emotions, except to depreciate them as untrustworthy and an impediment either to obedience to God in the first instance or to the rational will in the second instance.

In the modern era, with its emphasis on rationality, objectivity, detachment, and calculability, human emotions are considered irrational, quixotic, impossible to objectify, not subject to detached evaluation, and difficult to quantify. Even today, it is common lore not to let one’s emotions get in the way of sound reasoning and judgment. How many times have we heard someone say or have said to someone else, “Try not to be so emotional . . . try to behave more rationally.” The clear message is that emotions are of a lesser ilk than reason. They are too carnal and close to our animal passions to be considered worthy of being taken seriously—and worse still, they pollute the reasoning process.

The Enlightenment philosophers—with a few notable exceptions—eliminated the very mortality of being. To be alive is to be physical, finite, and mortal. It is to be aware of the vulnerability of life and the inevitability of death. Being alive requires a continuous struggle to be and comes with pain, suffering, and anguish as well as moments of joy. How does one celebrate life or mourn the passing of a relative or friend or enter into an intimate relationship with another in a world devoid of feelings and emotions?

New developments in evolutionary biology, cognitive science, and psychology, are laying the groundwork for a wholesale reappraisal of human consciousness. The premodern notion that faith and God's grace are the windows to reality and the Enlightenment idea that reason is at the apex of modern consciousness are giving way to a more sophisticated approach to a theory of mind.

Researchers in a diverse range of fields and disciplines are beginning to reprioritize some of the critical features of faith and reason within the context of a broader empathic consciousness. They argue that all of human activity is embodied experience—that is, participation with the other—and that the ability to read and respond to another person “as if” he or she were oneself is the key to how human beings engage the world, create individual identity, develop language, learn to reason, become social, establish cultural narratives, and define reality and existence.

If empathic consciousness flows from embodied experience and is a celebration of life—our own and that of other beings—how do we square it with faith and reason, which are disembodied ways of looking at reality and steeped in the fear of death?

When we deconstruct the notion of faith, we find that at the core are three essential pillars: awe, trust, and transcendence. The religious impulse begins with the sense of awe, the feeling of the wonder of existence, both the mystery and majesty. Awe is the deepest celebration of life. We marvel at the overwhelming nature of existence, and sense that by our own aliveness, we somehow fit into the wonder we behold.

Although faith is set in motion by a feeling of awe and requires a belief that one's life has meaning in a larger, universal sense of things, it can be purloined and made into a social construct that exacts obedience, feeds on fear of death, is disembodied in its approach, and establishes rigid boundaries separating the saved from the damned. Many institutionalized religions do just that.

It is awe that inspires all human imagination. Without awe, we would be without wonder and without wonder we would have no way to exercise imagination and would therefore be unable to imagine another's life “as if” it were our own. We know that empathy is impossible without imagination. Imagination, however, is impossible without wonder, and wonder is impossible without awe. Empathy represents the deepest expression of awe, and understandably is regarded as the most spiritual of human qualities.

But faith also requires trust—the willingness to surrender ourselves to the mystery of existence at both the cosmic level and at the level of everyday life with our fellow beings. Trust becomes indispensable to allowing empathy to grow, and empathy, in turn, allows us to plumb the divine presence that exists in all things. Empathy becomes the window to the divine. It is by empathic extension that we transcend ourselves and begin connecting with the mystery of existence.

In the empathic civilization, spirituality invariably replaces religiosity. Spirituality is a deeply personal journey of discovery in which empathic experience—as a general rule—becomes the guide to making connections, and becomes the means to foster transcendence. The World Values Survey and countless other polls show a generational shift in attitudes toward the divine, with the younger generation in the industrialized nations increasingly turning away from institutionalized religiosity and toward personal spiritual quests that are empathic in nature.

Reason too can be salvaged from its disembodied Enlightenment roots and be recast within an embodied empathic frame. While reason is most often thought of in terms of rationalization, that is, abstracting and classifying phenomena, usually with the help of quantifiable tools of measurement, it is more than that. Reason includes mindfulness, reflection, introspection, contemplation, musing, and pondering, as well as rhetorical and literary ways of thinking. Reason is all of this and more. When we think of reason, we generally think of stepping back from the immediacy of an experience and probing our memories to see if there might be an analogous experience that could help us make the appropriate judgment or decisions about how best to respond.

The critical question is where does reason come from? The Cartesian and Kantian idea that reason exists independently of experience as an a priori phenomenon to be accessed does not conform to the way we reason in the real world. Reason is never disembodied from experience but rather a means of understanding and managing it.

Experience, as we learned earlier, begins with sensations and feelings that flow from engagement with others. While one's sensations and feelings make possible the initial connection with the other, they are quickly filtered by way of past memories and organized by the various powers of reason at our disposal to establish an appropriate emotional, cognitive, and behavioral response. The entire process is what makes up empathetic consciousness. Empathy is both an affective and cognitive experience.

If empathy did not exist, we could not understand why we feel the way we do, or conceptualize something called an emotion or think rationally. Many scholars have mistakenly associated empathy with just feelings and emotions. If that were all it was, empathic consciousness would be an impossibility.

Reason, then, is the process by which we order the world of feelings in order to create what psychologists call pro-social behavior and sociologists call social intelligence. Empathy is the substance of the process. Reason becomes increasingly sophisticated as societies become more complex, human differentiation more pronounced, and human exchange more diverse. Greater exposure to others increases the volume of feelings that need to be organized. Reason becomes more adept at abstracting and managing the flood of embodied feelings. That's not to say that reason can't also be used to exploit others, for example, to advance narcissistic ends or create terror among people.

By reimagining faith and reason as intimate aspects of empathic consciousness, we create a new historical synthesis—the Age of Empathy—that incorporates many of the most powerful and compelling features of the Age of Faith and the Age of Reason, while leaving behind the disembodied story lines that shake the celebration out of life.

If the nation-state era was characterized by the notion of human material progress, the biosphere era is characterized by the celebration of all of life that cohabits the Earth.

Part III:

Toward a More Empathic Science in a Collaborative World

Celebrating the rich diversity of life that makes up the biosphere requires that we rethink the very methodological values by which we've come to understand and organize the world around us. In the modern world, science has become the new religion. We've put our faith in the hands of scientists, hoping they will unlock the secrets of existence and find new ways to harness nature to advance an Earthly utopia. But, is it possible that the scientific method that we've come to rely on as our undisputed seer on all matters of relevance is a deeply flawed methodology and skewed to a very narrow view of reality?

More than any other single concept, Francis Bacon's scientific method provided the modern market economy and nation state era a particular lens for investigating, explaining, and manipulating phenomena that mirrored the Enlightenment ideas about human nature itself. If human nature is detached, objective, rational, calculating, autonomous and utilitarian, than any method to examine nature ought to conform to the same assumptions and values.

Children are introduced to the scientific method in middle school and informed that it is the only accurate process by which to gather knowledge and learn about the real world around us.

Students are instructed that the best way to investigate phenomena and discover truths is by objective observation. A premium is put on dispassionate neutrality. The scientific observer is never a participant in the reality he or she observes, but only a voyeur. Phenomena are often evaluated in strictly quantifiable terms, leaving any sense of intrinsic value out of the equation. We are left with a purely material world, devoid of quality.

It's no wonder that generations of schoolchildren have found the learning experience to be dispiriting and alienating. They are expected to give up a sense of awe, eliminate passion, become disinterested, and assume the role of a bystander to existence. How would anyone expect to find personal meaning or be engaged in

such a world? The scientific method is at odds with virtually everything we know about our own nature and the nature of the world. It denies the relational aspect of reality, prohibits participation, and makes no room for empathic imagination. Students in effect are asked to become aliens in the world.

It should be noted that even at the beginning of the Age of Reason, not everyone agreed with Bacon's approach to ferreting out the truths of nature. Goethe, for one, took exception. He argued that nature is best approached as a participant rather than as a disinterested bystander. For example, when studying the morphology of a plant, the botanist must enter in the life of plant. Goethe called his scientific approach "a delicate empiricism which in a most inward way makes itself identical with the object and thereby becomes the actual theory."

Goethe's scientific method is the near mirror opposite of Bacon's. Goethe believed that his "power of thought is active while *united with the objects*" and that his "thinking does not separate itself from the objects." Goethe argued that true insights come not from detached observation but from deep participation with the phenomena under investigation.

Goethe's musings on appropriate scientific methodology lay dormant for more than 130 years but were picked up again by a number of psychologists in the last half of the twentieth century. Heinz Kohut argued that the existing scientific methodology was "experience-distant" and therefore removed from actual observation, and suggested an alternative experimental theory, which he called "experience-near" because the data gathered flowed directly from empathy and introspection.

Kohut believed that the most significant contribution of psychoanalysis to scientific thought "is that it has combined empathy and traditional scientific method. . . ." Introducing empathy into the field of science "as a tool of observation" would, according to Kohut, "increase the depth and breadth of the investigations conducted by a number of scientific disciplines." Moreover, embedding empathy into the heart of a rigorous scientific methodology was essential, argued Kohut, lest scientific pursuits "become increasingly isolated from human life." Kohut reminded his colleagues how a cold, disinterested, and rational approach to science had been instrumental in the twentieth century in fostering the aims of brutal totalitarian regimes and had led to "some of the most inhuman goals the world has ever known."

Kohut did not intend to throw out the abstract nature of traditional scientific inquiry, but only to deepen the investigation process upon which such abstractions are made. Kohut concluded that, "[t]his combination of empathic-introspective data-gathering with abstract formulation and theoretical explanation . . . constitutes a revolutionary step in the history of science." The new ideal in science, said Kohut, "can be condensed into a single evocative phrase: we must strive not only for scientific empathy but also for an empathic science."

Abraham Maslow, among others, concurred with Kohut's vision of a new science and attempted to calm the rising fury within the scientific establishment by clarifying what was perhaps the most dangerous challenge to science in its modern incarnation. He wrote,

I certainly wish to be understood as trying to *enlarge* science, not destroy it. It is not necessary to choose between experiencing and abstracting. Our task is to integrate them.

Maslow heaped scorn on the idea that a neutral observer, uninvolved and removed from reality and existence, could bring much insight to the workings or meaning of either reality or existence. Like Goethe and Kohut, Maslow reasoned that “[m]ore sensitive observers are able to incorporate more of the world into the self, i.e., they are able to identify and empathize with wider and more inclusive circles of living and nonliving things.”

Maslow used the case of Alcoholics Anonymous to make his point. Certainly a recovering alcoholic knows far more of the reality of an alcoholic than a disinterested neutral observer. Maslow called for what he called a “receptive strategy” of knowing, by which he meant “a non-interfering willingness for things to be themselves, an ability to wait patiently for the inner structure of percepts to reveal themselves to us, a finding of order rather than an ordering.” He noted that in certain fields—ethnology, ethology, clinical psychology, and ecology—such an approach yielded better scientific results.

Maslow's notion of “caring objectivity” has taken hold in the more than half century since he first reflected on the need for a second scientific method. A new generation of empathic researchers, like Jane Goodall in primatology, have used the “experience-near,” empathic approach to scientific investigation, to elicit new discoveries and insights about the nature of nature that would have been impossible to imagine using the traditional disinterested, value-neutral, scientific method.

A new science is emerging whose operating principles and assumptions are more compatible with empathic ways of thinking. The old science views nature as objects; the new science views nature as relationships. The old science is characterized by detachment, expropriation, dissection, and reduction; the new science is characterized by engagement, replenishment, integration, and holism. The old science is committed to making nature productive; the new science to making nature sustainable. The old science seeks power over nature; the new science seeks partnership with nature. The old science puts a premium on autonomy from nature; the new science on reparticipation with nature.

If we can harness an empathic scientific method that recognizes and acts to harmonize the many relationships that make up the life-sustaining forces of the planet, we will have crossed the divide into a sustainable economy and biosphere consciousness.

About the Author:

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Mr. Rifkin is also the founder and chairperson of the Third Industrial Revolution Global CEO Business Roundtable, comprised of 100 of the world's leading renewable energy companies, construction companies, architectural firms, real estate companies, IT companies, power and utility companies, and transport and logistics companies. Mr. Rifkin's global economic development team is the largest of its kind in the world and is working with cities, regions, and national governments to develop master plans to transition their economies into post- carbon Third Industrial Revolution infrastructures.

Mr. Rifkin is a senior lecturer at the Wharton School's Executive Education Program at the University of Pennsylvania—the world's #1 ranked business school—where he instructs CEOs and senior management on transitioning their business operations into sustainable Third Industrial Revolution economies.