

Introduction: The Evolutionary Challenge

At the cutting edge

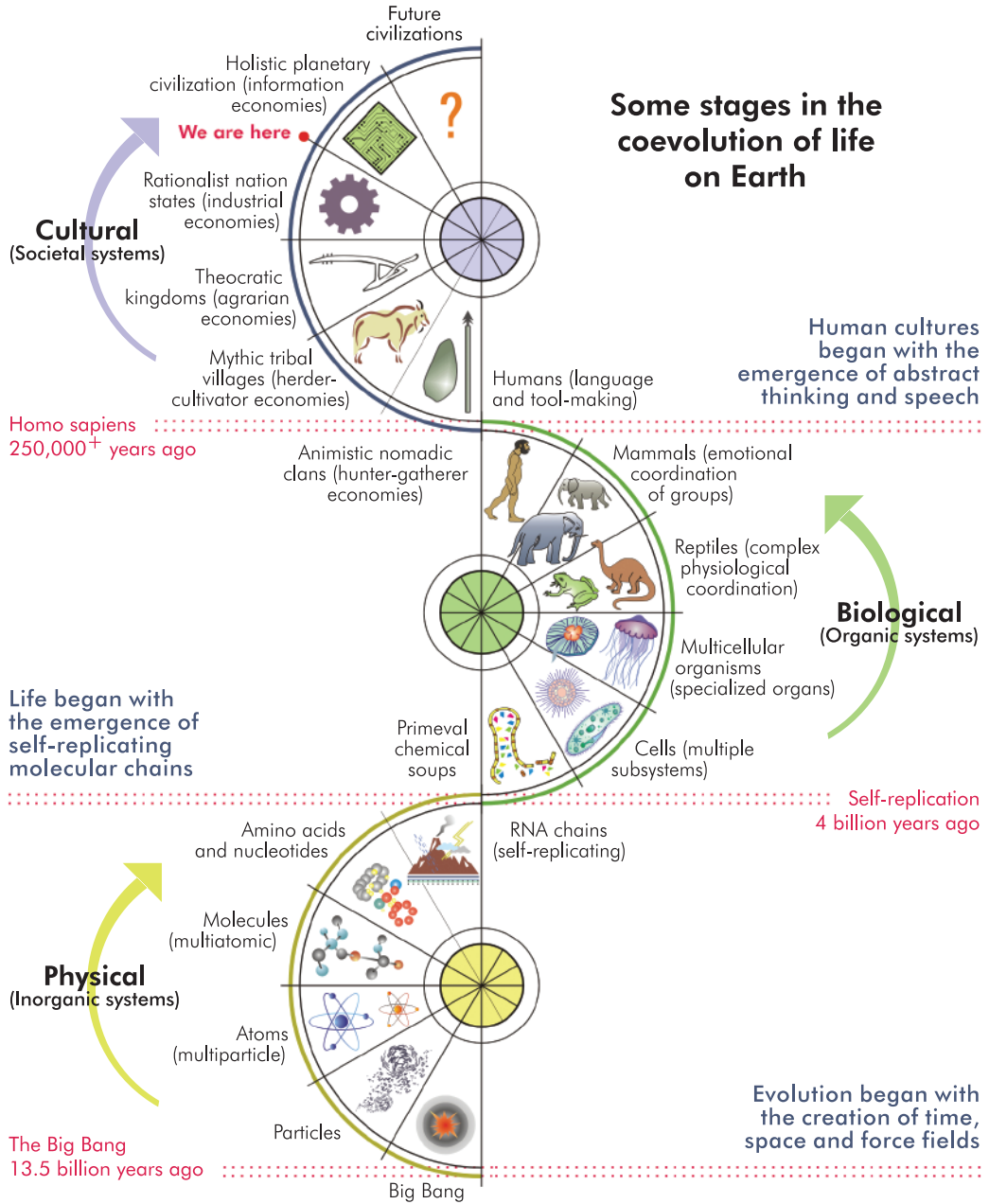
ALBERT EINSTEIN SAID THAT PROBLEMS CANNOT BE SOLVED at the same level of awareness that created them.¹ Because the global system creates problems like war, poverty and environmental destruction, it cannot solve them. But they could be solved at a different level — by a new type of planetary civilization with different views, values and social institutions.

Evolution's Edge uses societal evolution — the process by which societies reorganize themselves in more complex forms with new capabilities — to explain why the next level of civilization has already begun to emerge. It explains how we can support this evolutionary process — the transformation of our unsustainable Industrial Age into a sustainable Information Age.²

At the cutting edge of evolution, changing conditions and competition leave few options: species and societies either evolve or die off. Human societies have been evolving for hundreds of thousands of years. Evolutionary change results when either random mutation (in plants and animals) or conscious invention (in human societies) produce new structures with new capabilities. The need for environmental relevance means that useful changes are preserved, while useless changes disappear. At each new biological and social stage new and more complex forms and functions emerge.

We are the products of many successful evolutionary transformations: inorganic evolution from subatomic particles to complex molecules; biological evolution

Figure 1: BEST Futures³



from single-cell organisms to humans; social evolution from hunter-gatherer societies to industrial civilizations. Now we are in the middle of another evolutionary leap. However, our long history does not guarantee future success: most of the species and most of the civilizations that have ever existed on earth are extinct. Because industrial civilization is rapidly degrading the global environment, we have reached a critical point where the survival of humanity is threatened.

The problem is that limitless expansion is not possible on a finite planet. The danger is that our growth-based global system will collapse as critical resources become scarce and major ecosystems fail. The hope is that new ideas, values and technologies will enable us to avoid disaster and create a better world. Humanity has no choice: if global civilization is to survive, it must evolve into a completely new type of societal system. A consumer society cannot be transformed into a conserver society without structural change.

From tipping points to transformation

In front of us are both an immense challenge and a wonderful opportunity. The challenge is to avoid the catastrophic collapse of our natural and social worlds. The opportunity is to finally end humanity's ancient addiction to war and greed and to create a peaceful and healthy civilization. This is possible because the same forces that are driving us to self-destruction are creating the conditions for constructive change.

Human societies have been evolving for more than 200,000 years. Nomadic families of hunter-gatherers armed with stone spears have developed into industrialized nations armed with nuclear missiles. In the process, occasional contacts between isolated bands have developed into constant exchanges among international networks. Globalization marks the beginning of a tremendous shift past tribal and national boundaries towards a planetary civilization. But it also marks the end of unexplored frontiers and the end of major resource discoveries. With the shrinking of time and space, our species has begun to realize that it lives on a finite planet with limited resources.⁴

Globalization is triggering a profound shift in human consciousness. On one hand we are being forced to realize that we cannot do anything we want — the price of continuing to exploit nature and each other will be our own destruction. On the other hand, we are learning that our differences are less important than our commonalities — because we are all humans, if our species succeeds, our children and grandchildren will lead happy lives; if it fails, they will inhabit a dying world.

Although our future is threatened, this is a hopeful book. This is a time when we can — and must — make a *great turning*.⁵ We believe that the coming global crisis is a critical but inevitable part of the social evolution of our species. Our species has not failed — rather we risk being the victims of our own success. The Industrial Age has not been an evolutionary error, but a necessary stage in human development. It has encouraged the growth of science and technology; it has given most people better and longer lives. However, these benefits have come with enormous environmental and social costs, and the industrial system has now outlived its usefulness.

The continuing development of both destructive and constructive capabilities creates two trends:

- the dominant trend towards collapse — unsustainable consumption and environmental destruction.
- the emerging trend towards transformation — sustainable ideas, values and technologies.

These two trends are the major forces shaping the world today.⁶

There is no guarantee that all the necessary elements of a sustainable system will develop quickly enough to prevent irreversible environmental and social damage. Major evolutionary transformations only occur after a critical number of useful paradigm changing developments (functional mutations) have taken place within a biological or social system. If these new system components are compatible, their interactions can begin to change the form and function of the entire system.

All of the key social and technological components of a sustainable system will have to be present before it will be possible for our consumer society to transform itself into a consumer society. For this reason we need to actively support their development. In order to do this we need to understand not only the evolutionary process but also the requirements of a sustainable system. The purpose of *Evolution's Edge* is to help us determine how we can best support the constructive transformation of our world.

Changing the world

The challenge is not just to change our values and social institutions, but to change them quickly enough to avoid environmental and social disaster. But how can a world system based on power, violence and inequality become peaceful and just?

Global problems often appear to be too large and complex to understand, let alone manage. This is because human societies, like weather systems, are open systems with chaotic and complex dynamics. However, since all open systems operate within definable parameters and follow predictable patterns, appropriate theories can be used to explain and predict the dynamics of both weather systems and societal systems. The key to analyzing and managing global change is to recognize that our industrial civilization is not only a dynamic system (with all the characteristics of dynamic systems) but also a living and evolving societal system. Evolutionary systems theory provides us with powerful tools from both the natural and social sciences for analyzing complex global problems.⁸

My father Alastair M. Taylor, a historian and political geographer, was the first to use evolutionary systems theory to explain the historical evolution of societal systems and worldviews.

While previous societal systems (*historical ages*) took thousands of years to develop, we have only a few years left in which to transform our civilization. Fortunately, we do not have to start from square one. Because the shift to a holistic society began over a hundred years ago, many of the key components of a sustainable societal system are already present.⁹ Moreover, our species is constantly learning new skills and becoming increasingly adaptable.

At the same time as our civilization has become unsustainable, our species has acquired the ability to redesign living systems. We now understand biological and social processes well enough to make scientific interventions such as genetic modification and cultural interventions such as marketing. Scientists have now identified the basic components and codes of biological systems and are racing to create artificial life.¹⁰

Understanding how living systems work is both powerful and dangerous knowledge. While it can be used in irresponsible and destructive ways, it can also be used constructively to help us design a sustainable societal system. Because evolution is about innovation (the emergence of new forms and functions), it is possible for humans to accelerate evolutionary processes. We can support the emergence of a sustainable civilization through consciously inventing and constructing critical technical and cultural components.

Of course there are profound differences between physical and living systems. Physical systems are externally created while living systems are self-organizing. Societal systems maintain themselves, reproduce themselves and change themselves.

You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete.

— Buckminster Fuller,
architect and visionary
(1895-1983)⁷

The evolution of societal systems

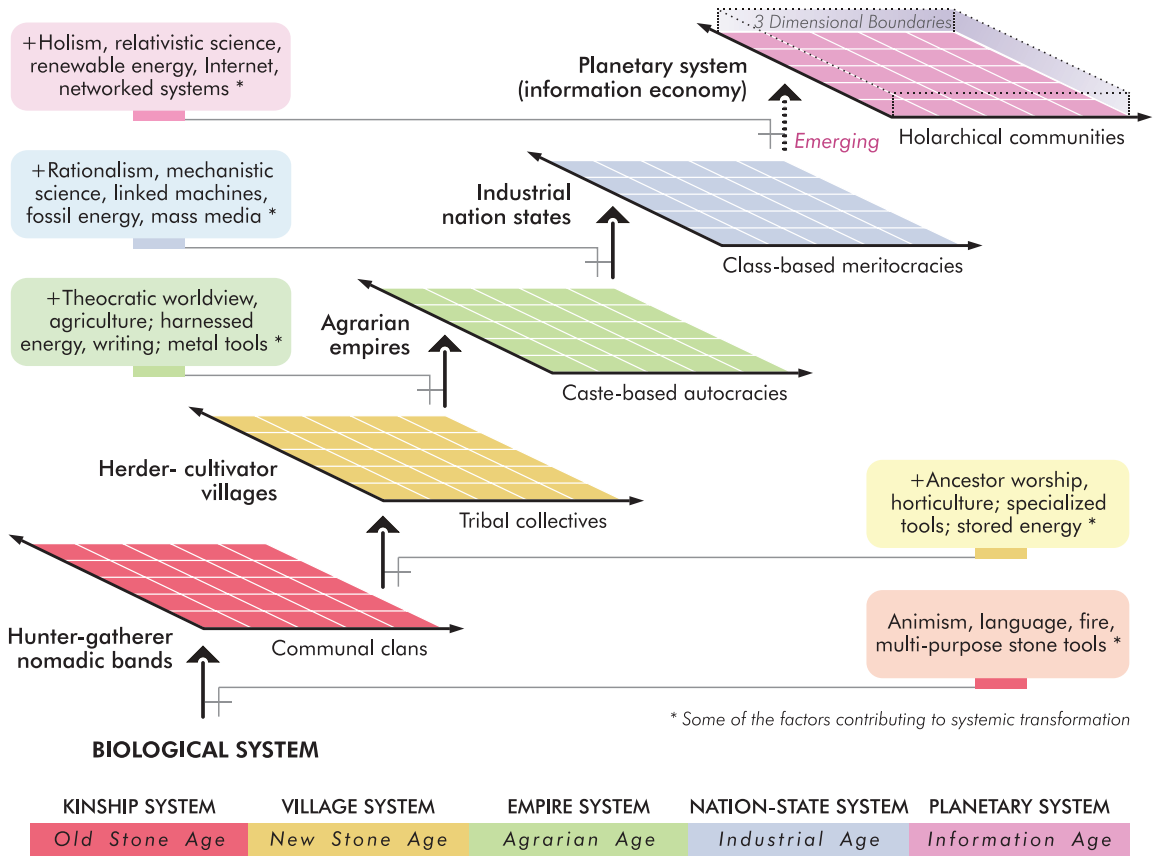


Figure 2: A Taylor¹¹

This means that in order to be successful, societal interventions must build on and support existing processes. If the interventions result in useful innovations (functional mutations), they are likely to be adopted and spread throughout the system.¹²

The purpose of *Evolution's Edge* is to contribute to the design and self-organization of a logical, workable solution to our planet's major problems.

- First we will need a clear statement of the general problem and the general solution — a declaration of the mission and vision.
- Next we will need to examine what works and what doesn't work in our current system in order to distinguish bad practices (what causes problems) from best practices (what supports solutions).
- Then we will need to link the best practices together in synergistic ways that support social networking (social self-organizing) and the emergence of functional new structures.

Sound easy? Well, it won't be. The devil is in the details — how the network connects together. The vision has to be right and the components have to have a design that enables them to self-organize into a sustainable system. In fact, in order to design a better social network we need not only better theories but an entirely new paradigm. But we are already more than half way there — better theories and the new paradigm have already been developed.

When President John Kennedy announced on May 25, 1961 that the US would put humans on the moon within a decade, many doubted whether his ambitious goals could be achieved. Although the technology did not yet exist for a trip to the moon, the project was launched because it was theoretically possible (and in the view of the US administration, a strategic necessity).¹³ The project achieved its goals ahead of schedule: the first astronaut landed on the moon on July 20, 1969.

The challenge that humanity faces now is to rapidly transform our unsustainable global system into a sustainable system. The survival of our species is a more urgent and important task than the space race, although it is in many ways a similar project. Like going to the moon, we only have a general idea of how we will do it. And although many difficult problems remain to be solved, we already have the basic theoretical skills that we will need to solve them.

We can expect to encounter enormous resistance. Technological innovations — like railways and cars — have always had to overcome initial derision and opposition, and social innovations — like democracy and public education — have been strongly opposed. Vested interests have always argued that progressive changes will cause economic ruin and social chaos. The same arguments are now being raised against efforts to protect the environment and to introduce renewable technologies. As always, these arguments are self-serving and irrational. Because the global economy is no longer sustainable, the complete transformation of the existing system is not

an option, but a requirement. Creating a more efficient and equitable economy will not cause a global depression — it is the only possible way to avoid economic collapse and sustain economic growth.

The design of this book

Although much has been written on why our unsustainable system should change, little has been written on how it can change. We know only too well that there is always enough money to finance wars and buy luxuries, but never enough to feed the hungry or preserve rare species. What we need to know now is how we can change the institutions that support exploitation and competition into structures that support conservation and cooperation.

The first part of *Evolution's Edge* describes in detail the coming collapse of our natural and social worlds. It shows why our current global system is environmentally and culturally unsustainable, why the design of the industrial system is now obsolete, why policy adjustments and new technologies will not be able to prevent its inevitable collapse. We look at why earlier civilizations have failed and how cascading crises can provoke system failure.

The second part of *Evolution's Edge* describes how a new and very different type of societal system has begun to evolve and how we can support this process. We explain the paradigm changing factors that cause societies to evolve into more complex and conscious systems; because these factors are now developing and interacting with each other, the potential exists for rapid social evolution. We examine emerging technologies, ideas, values and social organizations; we analyze their role in supporting the evolution of a sustainable system. We then analyze the major developing global trends and probable future scenarios.

We also outline the design requirements of a sustainable planetary system and provide practical tools for supporting the development of its essential social and technological components. We explain how we can change destructive behaviors and empower ourselves and our social networks. Since societies are organized through culture, we also describe why an integral worldview and constructive values are the key to the emergence and integration of a functional holistic system. Finally we outline a common, cooperative vision for uniting a movement for constructive global change.

Evolution's Edge provides a rough map of the terrain that humanity will have to cross on the way to a sustainable future. Since mapping the future is an inexact

science, this map will inevitably contain many errors. So read this book carefully and critically. We do not claim to have any final answers. The world's complex problems cannot be solved by a single solution or a single group. It will require the collective wisdom and combined efforts of billions of people to heal our dying planet. The alternative to our cancerous consumer society is not a new dogma and another monoculture, but a critically aware and culturally diverse holistic civilization.

This book builds on the work of countless dedicated activists and scientists from every part of the world. Its purpose is to explain why the collapse of the current global system is inevitable, why constructive change is possible, and how we can support the evolution of a better world.