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Supplementary Material

Telling the Bionarrative: a Museum of Environmental Ideas

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THE BIONARRATIVE:

A STORY THAT COULD CHANGE THE WORLD

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Appendices available at *https://thebionarrative.wordpress.com/*

THE STORY

The story of life on Earth, and of human civilisation as part of this story, is of overarching significance for every one of us, and for society as a whole. Yet it is known and understood by only a small section of the human community. If this story were embraced by the prevailing cultures of the world, the future prospects for humankind would be much brighter. We refer to this story as the *bionarrative.*

Why is this story so important? Here, very briefly, are some of the reasons.

First, the bionarrative conveys a sense of perspective crucial for understanding the true nature of the human situation on Earth today.

More specifically, the bionarrative:

- tells us about the history of life on Earth and the coming and going, especially over the past 600 million years, of myriads of life forms, leading to the rich network of interacting and interdependent living organisms that make up our world today (Appendices 1 and 2).
- tells us about the fundamental physiological and ecological processes and principles on which we, and all other living organisms, depend (Appendix 3).
- reminds us that all plant and animal life and human civilisation depend on photosynthesis in green plants.
- tells us about the evolutionary emergence of *Homo sapiens* some 300,000 years ago. Our species has been in existence for less than 0.01 per cent of the time of life on Earth (Appendix 4).
- tells us how humans possess an attribute unique in the animal kingdom—the ability to invent, memorise and communicate with a symbolic spoken language.
- tells us how this aptitude for language led to the accumulation of shared worldviews, knowledge, beliefs and attitudes in human groups. That is, it led to human culture.
- tells us about the emergence of religion as a universal feature of human society. While there has been enormous variation in the details of the various belief systems, they all involve supernatural spirits or gods, and they all provide a religious explanation of human existence (Appendix 5).
- shows how human culture has recently emerged as a powerful new force in nature. It has led to activities that have been to the benefit of humans (cultural adaptations) and to activities that have been greatly to their disadvantage (cultural maladaptations) (Appendix 6).
- alerts us to the need to be constantly vigilant—to make sure that the worldview, assumptions and priorities of the culture in which we are immersed are not leading us to behave in ways that are against nature or are causing unnecessary threats to human wellbeing or survival.
- tells us about the innate physical and psychosocial health needs of humankind, and about the health needs of the planet's ecosystems that support us (Appendix 7).
- reminds us that our civilisation is a product of biological evolution, and that it is entirely dependent for its continued existence on the underlying processes of life. Keeping these processes healthy must be our top priority, because everything else depends on them.

- tells us that the history of *Homo sapiens* has consisted of four quite distinct ecological phases :
  Ecological Phase 1—the Hunter-gatherer phase, beginning 300,000 years ago (Appendix 8);
  Ecological Phase 2—the Early Farming Phase, beginning around 12,000 years ago (Appendix 9);
  Ecological Phase 3—the Early Urban Phase, beginning around 9000 years ago (Appendix 10);
  Ecological Phase 4—the Exponential Phase (beginning around 250 years ago) This phase is also referred to as the Techno-industrial Phase or the Anthropocene. It represents less than 0.1 per cent of *Homo sapiens*‘s time on Earth.
- tells us that Ecological Phase 4 has seen an astounding profusion of technological innovations—from steam engines and motor vehicles to intercontinental rockets and spacecraft—from electric lights and radio to thermonuclear bombs, computers, smartphones and the Internet.
- tells us that there are now about 1500 times as many people alive as there were when farming began. Nearly 90 per cent of this increase has occurred in ecological Phase 4. The global population is now increasing at the rate of 1.4 million per week.
- tells us that the Exponential Phase has been characterised by massive intensification of use of resources and energy and discharge of wastes (Appendix 11). For instance, humankind is now responsible for the emission of about 10,000 times as much of the greenhouse gas carbon dioxide as was the case when farming began. More than 90% of the increase has occurred in the last 100 years of the Exponential Phase.
- tells us that climate change, due to increasing concentrations of greenhouse gases in the atmosphere, is at present the most critical ecological issue (Appendix 12). There are, however, many other serious threats to sustainability, including widespread land degradation, worldwide loss of biodiversity, global pollution with chemical products of industrialisation, massive pollution of the oceans with plastics and acidification of the oceans resulting from an increased uptake of carbon dioxide from the atmosphere (Appendix 12).
- tells us that the Exponential Phase has seen an astronomical increase in the destructive power of explosive weapons. The nuclear bombs dropped on Hiroshima and Nagasaki were many million times more powerful than the ‘conventional’ bombs of World War 1; and thermonuclear bombs now in existence are several thousand times more powerful than the Hiroshima and Nagasaki bombs. There are many thousands of these bombs stockpiled across the world (Appendix 13).
- tells us that cultural maladaptations in Ecological Phase 4 are on a scale and of a kind that threaten the whole of humankind as well as countless other species. If present trends continue unabated the collapse of civilisation is inevitable. The days of ecological Phase 4 are numbered.
- shows that the prevailing cultures that are driving human expansion across the globe today are unaware of these ecological realities. They have lost sight of the fact that we are part of nature and totally dependent on the processes of life that underpin our existence; and they have no grasp of the magnitude and seriousness of current human impacts on the biosphere.

A VISION: HEALTHY PEOPLE ON A HEALTHY PLANET

Finally, and most importantly, the bionarrative leads us to the inescapable conclusion that the only hope for the future lies in a rapid transition to a fifth ecological phase of human history, a phase in which human society is truly sensitive to, in tune with, and respectful of the processes of life on which we depend, and of which we are a part. We call this a *biosensitive society* (Appendix 14). A biosensitive society will promote health in all sections of the human population as well as in the ecosystems of the biosphere.

However, there is no chance that biosensitivity will be achieved unless there comes about a radical transformation in the worldviews and priorities of the prevailing cultures of the world – a transformation based on shared understanding of the bionarrative. Through this new understanding, these cultures will come to hold profound respect for the life processes that underpin our existence, and achievement of biosensitivity will be given the highest priority in human affairs. This shift in priorities will be the pivotal factor in the transition to a fifth, biosensitive, ecological phase of human history. The social and economic changes necessary for the survival of civilisation and future wellbeing of humankind will not come about without this seminal cultural transformation. Biosensitivity will be a guiding principle in all spheres of human endeavour.

In a biosensitive society the following issues will be very high on the social and political agenda: minimising the use of fossil fuels; sequestering carbon in the atmosphere; switching to a steady state economy; eradicating weapons of mass destruction; minimising chemical and plastic pollution; protecting biodiversity; protecting the biological integrity of soils; promoting local food production; bringing an end to population growth; reducing economic disparities; promoting healthy living.

At the level of individuals and families, biosensitivity will be associated with a high quality of life. People's lifestyles will satisfy the physical and psychosocial health needs of the human species (Appendix 6). However, these health needs will be satisfied in ways that do not result in continual growth in resource and energy use, pollution of the natural environment or loss of biodiversity. Consumerism will not be a feature of the biosensitive society. There will be more emphasis than at present on such activities as growing food, enjoying and caring for the natural environment, local sport, making music, dancing, the arts, theatre, cycling, and convivial social interaction.

CONCLUSION

A wave of new understanding of the story of life and the human place in nature, sweeping across the cultures of the world, is a precondition for the survival of humanity.