

The Sacred Balance: Rediscovering Our Place in Nature

David Suzuki

David Suzuki (b. 1936) is a Canadian academic and an environmental activist. Suzuki earned a Ph.D. in zoology from the University of Chicago in 1961, and he was a professor in the genetics department at the

University of British Columbia from 1963 until 2001. Suzuki was the host of several popular television and radio series about nature and the environment, including the long-running CBC Television science magazine, *The Nature of Things*, which was aired in more than forty countries.

The Sacred Balance was published in 2007 and was later adapted into a series of documentary films. The book highlights humankind's interconnection with the earth and with other living creatures. As you read the prologue to the book, think about the qualities that have made humans successful as a species and how some of those same qualities may threaten our future health and well-being.

Suppose that 200,000 years ago, biologists from another galaxy searching for life forms in other parts of the universe had discovered Earth and parked their space vehicle above the Rift Valley in Africa. At the moment of our species' birth, mammoths, sabre-toothed cats, huge moa birds and giant sloths still roamed the planet. Those intergalactic visitors would have gazed upon vast grasslands filled with marvellous plants and animals, including a newly evolved species, *Homo sapiens*.

It is highly unlikely that those alien scientists would have concentrated their attention on this infant upright ape species in anticipation of its meteoric rise to preeminence a mere two hundred millennia later. After all, those early humans lived in small family groups that didn't rival the immense herds of wildebeest and antelope. In comparison with many other species, they weren't especially large, fast or strong, or endowed with special sensory acuity. Those early humans possessed a survival trait that was invisible because it was locked within their skulls and only revealed through their behavior. Their immense and complex brains conferred tremendous intelligence, along with a vast capacity for memory, an insatiable curiosity

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and an astonishing creativity — abilities that more than compensated for their physical and sensory deficiencies.

That newly evolved human brain invented a novel concept called the "future." In reality, all that exists is the present and our memories of what is past, but by creating the notion of a future, we were unique in recognizing that we could influence events to come by what we do in the present. By looking ahead, we could anticipate potential danger and opportunities. Foresight was the great advantage that catapulted *Homo sapiens* into a position of dominance on the planet.

The eminent Nobel laureate François Jacob suggests that the human brain is "hardwired" to require order. Chaos is terrifying to us, because without some appreciation of cause and effect, we have no possibility of understanding and controlling the cosmic forces impinging on our lives. Early humans recognized that there are patterns in nature that are predictable — diurnal rhythm, or the movement of the sun; movement of the moon and stars; tides; seasons; animal migration; and plant succession. They were able to exploit these regularities for their own benefit and to avoid potential hazards.

Over time, every human society evolved a culture that inculcated an understanding of its place on Earth and in the cosmos. The collective knowledge, beliefs, languages and songs of each society make up what anthropologists call a worldview. In every worldview, there is an understanding that everything is connected to everything else, that nothing exists in isolation. People have always known that we are deeply embedded in and dependent upon the natural world.

In such a world of interconnectedness, every action has consequences, and since we were part of that world, we had a responsibility to act properly to keep the world in order. Many of our rituals, songs, prayers and ceremonies were reaffirmations of our dependence on nature and our commitment to behave properly. That is how it has been for most of human existence all over the world.

From Naked Ape to Superspecies

But suddenly in the last century, *Homo sapiens* has undergone a radical transformation into a new kind of force that I call a "superspecies." For the first time in the 3.8 billion years that life has existed on Earth, one species — humanity — is altering the biological, physical and chemical features of the planet on a geological scale. That shift to superspecies has occurred with explosive speed through a number of factors. One is population. It took all of human existence to reach a

billion people in the early nineteenth century. A hundred years later, when I was born in 1936, there were two billion people on Earth. In my lifetime, global population has tripled. Thus, by virtue of our numbers alone, our species' "ecological footprint" on the planet has grown explosively — we all have to eat, breathe and drink, and clothe and shelter ourselves.

We are now the most numerous mammalian species on the planet, but unlike all the others, our ecological impact has been greatly amplified by technology. Virtually all of modern technology has been developed within the past century, thereby escalating both the scale and scope of our ability to exploit our surroundings. Resource exploitation is fueled by an exploding consumer demand for products, and the fulfilment of that demand has become a critical component of economic growth. Hyperconsumption in the developed world serves as the model for people in developing countries now that globalization has rendered the entire world population a potential market. Taken together, human numbers, technology, consumption and a globalized economy have made us a new kind of force on the planet.

Throughout our evolutionary past, we were a local, tribal animal. We may have encountered a hundred humans over a range of a few hundred kilometers in a lifetime. We didn't have to worry about tribes on the other side of a mountain or across an ocean; nor did we have to consider the collective impact of our entire species, because our ecological footprint was so much lighter and nature seemed vast and endlessly self-renewing. Our new status of superspecies has been achieved so rapidly that we are only now becoming aware of a new level of collective responsibility, which reflects a dawning realization that taken all together, human activity is the main cause of the current decline in the biosphere's rich diversity and productivity that support all life on earth.

A Shattered World

As we have shifted our status to superspecies, our ancient understanding of the exquisite interconnectivity of all life has been shattered. We find it increasingly difficult to recognize the linkages that once gave us a sense of place and belonging. After all, we are flooded with food and goods that come from all parts of the world, so we scarcely notice that it's the middle of winter when we are buying fresh strawberries and cherries. The constraints of locality and seasons are pushed aside by the global economy. Exacerbating the

fragmentation of the world has been the stunning shift from pre-dominant habitation in rural village communities to concentration in large cities. In big cities, it becomes easy to assume that we differ from all other species in that we create our own habitat and thereby escape the constraints of nature. It is nature that cleanses water, creates air, decomposes sewage, absorbs garbage, generates electricity and produces food, but in cities, these "ecosystem services" are assumed to be performed by the workings of the economy.

To make matters worse, as we look toward more and more esoteric sources for our information, the context, history and background needed to set new "facts" or events in place are lost, and our world is broken up into disconnected bits and pieces. While we look to science to reveal the secrets of the cosmos, its primary methodology of reductionism focuses on parts of nature. And as the world around us is examined in pieces, the rhythms, patterns and cycles within which those pieces are integrated are lost, and any insights we gain become illusions of understanding and mastery. Finally, as transnational corporations, politics and telecommunications move onto the global stage, the sense of the local is decimated.

This, then, is where we are at the beginning of the third millennium. With explosive speed, we have been transmogrified from a species like most others that live in balance with their surroundings into an unprecedented force. Like a species introduced into a new environment free of constraints, we have expanded beyond the capacity of our surroundings to support us. It is clear from the history of the past two centuries that the path we embarked on after the Industrial Revolution is leading us increasingly into conflict with life support systems of the natural world. Despite forty years of experience in the environmental movement we have not yet turned onto a different path.

The Growth of Environmentalism

Like millions of people around the world, I was galvanized in 1962 by Rachel Carson's eloquent call to action in her book Silent Spring. We were swept up in what was to become the "environmental movement." In British Columbia, that meant protesting such threats as the American testing of nuclear weapons at Amchitka in the Aleutian

Islands (a protest that gave birth to Greenpeace^o in Vancouver), clear-cut logging throughout the province, proposed offshore drilling for oil, the planned dam at Site C on the Peace River, and air and water pollution from pulp mills. In my mind, the problem was that we were taking too much from the environment and putting too much waste back into it. From that perspective, the solution was to set limits on how much and what could be removed from the biosphere for human use and how much and what could be put back into our surroundings, then make sure to enforce the regulations. So in addition to protesting, marching and blockading, many of us were lobbying politicians to set aside more parks, to enact Clean Water and Clean Air legislation, to pass Endangered Species Acts and to establish the agencies to enforce the regulations. When *Silent Spring* was published in 1962, no government on Earth had a Minister or Department of the Environment. *United 1962 there is no minis. for ce.*

But Carson's book itself offered evidence of the need for a deeper analysis. As I read the book, I was shocked to realize that the experimental systems scientists study in flasks and growth chambers are artifacts, simplifications meant to mimic reality but lacking the context within which those simplified systems exist and devoid of the rhythms, patterns and cycles that impinge on the Earth. This realization came to me as a profound shock and impelled me to look beyond the lab into the real world.

The more involved I became in environmental issues, the clearer it became to me that my rather simple-minded approach wouldn't work, because we were too ignorant to anticipate the consequences of our activity and to set appropriate limits. Carson's book dealt with DDT.^o In the 1930s when Paul Mueller, working for the chemical company Geigy in Switzerland, discovered that DDT killed insects, the economic benefits of a chemical pesticide were immediately obvious. Trumpeting the imminent scientific conquest of insect pests and their associated diseases and damage to crops, Geigy patented the discovery and went on to make millions, and Mueller was awarded the Nobel Prize in 1948. But years later, when bird watchers noted the decline of eagles and hawks, biologists investigated and discovered the hitherto unknown phenomenon of "biomagnification," whereby compounds become concentrated as they are ingested up the food chain. How could limits have been set on DDT in the early 1940s

Greenpeace: an organization founded in 1971 that stresses the need to maintain a balance between human progress and environmental conservation.

DDT: $C_{14}H_9Cl_5$; potent chemical used as an insecticide, prohibited for agricultural use in the United States since 1973. *this is carter makes bird disappear*

when we didn't even know about biomagnification as a biological process until birds began to disappear?

Similarly, CFCs were hailed as a wonderful creation of chemistry. These complex molecules were chemically inert, so they didn't react with other compounds and thus made excellent fillers in aerosol cans to go along with substances such as deodorants. No one anticipated that because of their stability, CFCs would persist in the environment and drift into the upper atmosphere, where ultraviolet radiation would break off ozone-scavenging chlorine free radicals. Most people had never heard of the ozone layer, and certainly no one could have anticipated the long-term effects of CFCs, so how could the compounds have been regulated? I have absolutely no doubt that genetically modified organisms (GMOs) will also prove to have unexpected negative consequences despite the benefits claimed by biotech companies. But if we don't know enough to anticipate the long-term consequences of human technological innovation, how can its impact be managed? For me as a scientist, this posed a terrible conundrum.

How the heck will we ever solve this?

A Way Out

I gained an important insight to free me from this quandary in the late 1970s. As host of the long-running television series *The Nature of Things*, I learned of the battle over clearcut logging in the Queen Charlotte Islands, off the coast of British Columbia. For thousands of years, the islands have been home to the Haida, who refer to their lands as Haida Gwaii. The forestry giant MacMillan Bloedel had been clearcutting huge areas of the islands for years, an activity that had generated increasingly vocal opposition. It was a good story, and I proposed to report it. In the early 1980s, I flew to Haida Gwaii to interview loggers, forestry officials, government bureaucrats, environmentalists and natives. One of the people I interviewed was a young Haida artist named Guujaaw who had led the opposition to logging for years.

Unemployment was very high in the Haida communities, and logging generated desperately needed jobs for the Haida. So I asked Guujaaw why he opposed the logging. He answered, "Our people have determined that Windy Bay and other areas must be left in their natural condition so that we can keep our identity and pass it on to

Keep it for
 following generations. The forests, those oceans, are what keep us as Haida people today." When I asked him what would happen if the logging continued and the trees were cleared, he answered simply, "If they're logged off, we'll probably end up the same as everyone else, I guess."

It was a simple statement whose implications escaped me at the time. But on reflection, I realized that he had given me a glimpse into a profoundly different way of seeing the world. Guujaaw's statement suggested that for his people, the trees, the birds, the fish, the water, and wind are all parts of Haida identity. Haida history and culture and the very meaning of why Haida are on earth reside in the land.

Ever since that interview, I have been a student learning from encounters with indigenous people in many parts of the world. From Japan to Australia, Papua New Guinea, Borneo, the Kalahari, the Amazon and the Arctic, aboriginal people have expressed to me that vital need to be connected to the land. They refer to Earth as their Mother, who they say gives birth to us. Moreover, skin enfolds our bodies but does not define our limits because water, gases and heat dissipating from our bodies radiate outward, joining us to the world around us. What I have learned is a perspective that we are an inseparable part of a community of organisms that are our kin. *243*

In 2001, U.S. president Bill Clinton joined with scientists to announce the completion of the Human Genome Project, which elucidated the complete sequence of three billion letters in a single human nucleus. While politicians and scientists speculated about the potential benefits of understanding diseases, new drugs and cures for many ailments, the most amazing revelation was all but ignored. Not only is the human genome nearly identical to our closest relatives, the Great Apes, as well as our pet dogs and cats, we carry thousands of genes identical to those in fish, birds, insects and plants, a revelation that we share genes with all other life forms to whom we are related by our shared evolutionary history.

Changing Our Perspective *1946*

In 1990, my wife, Tara Cullis, and I established an organization that would examine the root causes of ecological destruction so that we could seek alternatives to our current practices. We decided to draft a document that would express the foundation's worldview and

Human Genome Project: a federally funded U.S. scientific project to identify both the genes and the entire sequence of DNA base pairs that make up the human genome.

perspective and could be offered to the Earth Summit in Rio de Janeiro in 1992. We called it a Declaration of Interdependence. Tara and I formulated a rough draft and asked for input from Guujaaw, ethnobiologist Wade Davis and the children's singer Raffi. When I was working on the first draft, I tried writing "We are made up of molecules from the air, water and soil," but this sounded like a scientific treatise and failed to convey the simple truth of our relationship with Earth in a powerful, emotional way. After spending days pondering the lines, I suddenly thought, "We are the air, we are the water, we are the earth, we are the Sun."

"We are intimately fused to our surroundings and the notion of separateness or isolation is an illusion."

With this realization, I also saw that environmentalists like me had been framing the issue improperly. There is no environment "out there" that is separate from us. We can't manage our impact on the environment if we *are* our surroundings. Indigenous people are absolutely correct: we are born of the earth and constructed from the four sacred elements of earth, air, fire and water. (Hindus list these four and add a fifth element, space.)

Once I had finally understood the truth of these ancient wisdoms, I also realized that we are intimately fused to our surroundings and the notion of separateness or isolation is an illusion. Through reading I came to understand that science reaffirms the profundity of these ancient truths over and over again. Looked at as biological beings, despite our veneer of civilization, we are no more removed from nature than any other creature, even in the midst of a large city. Our animal nature dictates our essential needs: clean air, clean water, clean soil, clean energy. This led me to another insight, that these four "sacred elements" are created, cleansed and renewed by the web of life itself. If there is to be a fifth sacred element, it is biodiversity itself. And whatever we do to these elements, we do directly to ourselves.

As I read further, I discovered the famed psychologist Abraham Maslow, who pointed out that we have a nested series of fundamental needs. At the most basic level, we require the five sacred elements in order to live rich, full lives. But when those basic necessities are met, a new set of needs arises. We are social animals, and the most profound force shaping our humanity is love. And when that vital social requirement is fulfilled, then a new level of spiritual needs arises as an urgent priority. This is how I made the fundamen-

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tal reexamination of our relationship with Earth that led to The Sacred Balance.

In the years since, I have yet to meet anyone who would dispute the reality and primacy of these fundamental needs. And everything in my reading and experiences since then has merely reaffirmed and amplified my understanding of these basic needs. The challenge of this millennium is to recognize what we need to live rich, rewarding lives without undermining the very elements that ensure them.