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Seven Reasons Why I Remain an Optimist

ELISABET SAHTOURIS

Internationally renowned evolution biologist Elisabet Sahtouris has spent the better part of her life observing intelligence at play in the biological world. As an author, professor, and consultant, she advocates for a shift in the Western scientific worldview that would acknowledge the centrality of consciousness in an evolving cosmos. We invited Dr. Sahtouris to share what she thinks the future holds for us in the face of a growing number of global crises. Her response may surprise you.

1 THE UNIVERSE IS ALIVE AND WELL.

Every culture has a creation story that gives meaning, purpose, and guidance to its people. While priesthoods of one sort or another traditionally told these stories, an experiment with secular democratic states has been underway for the past few centuries. Making these secular states work has been an ongoing experiment not only in achieving democratic governance but also in the even more fundamental experiment of having science, rather than religion, provide the great story of how things work in our universe and on our planet to guide people's lives.

The scientific creation story we've known, at its simplest, has come from physics and biology. Physics gave us a nonliving, accidental, purposeless, and meaningless universe, running down to its heat death by entropy, and biology doomed us to endless struggle in scarcity as nature's way of evolution—and thus our own human nature. This soulless materialist science scenario must be the most depressing creation story ever told. Yet our culture has created our reality from it, practicing scientific opposition to religion, believing we must get what we can while we can (usually at someone else's expense), building a now worldwide win/lose capitalist economy of cutthroat competition, and making material consumption the dominant lifestyle people have or aspire to have. What made us believe this story would lead to the glorious golden age

envisioned by the founding fathers of science for more than a handful of people? It suggested exactly what we got: things running down, ravaged environments, failure to eliminate grinding poverty, the continued terror of warfare, and amazing technological things that blind most of us to this overall picture.

Some of us, however, see the present situation as a huge opportunity, ripe for creating the future we truly desire, and our optimism comes from information that science itself has recently produced—information that is more compatible with the hopeful creation stories of other cultures, especially consciousness-based Eastern cosmologies. This new story explains how the universe is not running down because entropy is balanced by syntropy, and we point out that species can and do learn how inefficient and expensive competition is compared with the collaboration nature demonstrates in the abundance of unspoiled rainforests, prairies, and coral reefs. Seen in retrospect, every crisis on our planet has created the stress that became an opportunity for further evolution. Whether a planetwide extinction, an ice age, or a locally destroyed ecosystem, disaster has always been followed by the sudden appearance of many new or previously suppressed species. Nature is conservative when things go well but radically creative when they don't, and from my perspective, is far too intelligent to proceed by accident!

For my broader cosmic model, I begin with Chilean

biologists Humberto Maturana and Francisco Varela's definition of life as autopoietic (self-creating). By this definition, any entity continually creating and maintaining itself in relation to its environment is alive. The entire universe, from atoms to galaxies, is a self-creating living system by this definition, since all universal objects create and maintain themselves from the vacuum field, with planetary life the most complex result of this overall process. There is no reason why the data of scientific research cannot be reinterpreted in this new framework composed of different assumptions about the basic nature of our universe. After all, the foundational assumptions of science that nature is nonliving, nonconscious, nonintelligent, thus purposeless and meaningless, are unprovable beliefs stemming from a particular historical context of reaction against religion, prior to which all nature had been seen as alive. Changing these assumptions will enhance our understanding of scientific findings, as well as reduce the entirely unnecessary rift between science and spirituality. Moreover, it gives us the life-sustaining creation story we need—a story that inspires and encourages our rapid maturation, knowing that nature is on our side in this learning process.

2 WE CREATE OUR OWN REALITY AND NATURE SHOWS THE WAY.

Look around you and note that everything human-made in sight originated as an idea in someone's mind, then tell me we do not create our reality from our consciousness. Once we acknowledge how fundamental consciousness is to all human experience, including all our creative action, scientific models of nature will have to acknowledge as their context perception by human senses within human consciousness. Every living-cosmos model I've encountered posits a pervasive cosmic consciousness at its core; in this view, consciousness is fundamental to all cosmic processes,

rather than a late emergent product after billions of years. Ever-increasing numbers of Western scientists and scholars have made this 180-degree turn in their belief about consciousness.

The greatest story I know within the considerable trajectory of Earth's evolution over five billion years is that of the formation of the nucleated cell by our very remote archaeobacterial ancestors. Having evolved many competitive lifestyles as Earth's pioneer creatures, having fruitfully multiplied to coat its surface from deep within rock to high within its atmosphere, having rearranged its crustal materials and created a complex atmosphere, these amazing, invisibly small beings both created and solved planet-wide crises such as hunger and pollution. They did this with new "technologies," ranging from the photosynthetic harnessing of sunlight to make food and the employment of deadly oxygen in processing food, to the creation of nuclear piles, electric bacterial motors, and the first World Wide Web in the form of planetwide DNA information exchange. But the greatest of their achievements was maturing out of hostile, if creative, competition into life-sustaining, creative collaboration. Archaeobacteria with different abilities and lifestyles wove a cooperative division of labor and made individual contributions to a common nuclear DNA library to form a new communal enterprise. It was so successful that it remains to this day, billions of year later, the nucleated cell from which all multicelled creatures grow and of which they and we are composed. What good news that our bacterial ancestors could make friends of enemies in this lasting collaboration.

This story is our story now—the story we call globalization. For what is globalization but our effort to grow out of hostile win/lose economics into a global family that works for all. If each of our cells has the sustainable complexity of a large human city—and we are an amazingly harmonious complex of a hundred trillion cells—we should hardly think it more difficult to weave



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six billion people together. We already cooperate in so many ways, from communications and money exchange to travel, interfaith dialogue, international treaties, space stations, and so on. What we lack is the win-win economics brilliantly modeled in these fabulous bodies of ours and the rainforest economies that create endless abundance through sharing and recycling. We have the information, insight, and power required to create a world every bit as cooperative as these. Look beyond the major media and you will see it happening all over the planet.

3 YOUTH HAVE UNPRECEDENTED POWER TO CREATE THE WORLD THEY WANT.

The Internet is one of the largest self-organizing living systems on the planet. Youth today have unprecedented power because the Internet links ever-increasing numbers of them in a worldwide dialogue without political boundaries. The Massachusetts Institute of Technology and China both have designed laptops so cheap that young people in schools anywhere will soon be empowered to become global co-dreamers and co-creators of the future they envision. And their record to date is terrific! While their elders prey on them through the same Internet commercially, sexually, and ideologically, they themselves show little interest in racism, warfare, or greed. They are far from fundamentalist in their openness to new ideas. Although raised on video games, they are becoming less interested in moving agents about on a screen and more interested in *being* agents by blogging, making and sharing music and videos, forming organizations such as Youth for Environmental Sanity, the Indigenous and Non-Indigenous Youth Alliance, the World Spirit Youth Council, and countless other alliances for social justice, peace, and environmental issues. The biggest challenge they face is changing the economic system so that no one need show up if a war is called. But because they are so deeply well-informed on a person-to-person level across cultures, religions, and ideologies, today's youth are better equipped for the task than any previous generation.

4 WHEN THERE IS NO MONEY, PEOPLE ARE STILL ACHIEVING THEIR DREAMS.

The single most impressive project I have seen in all my travels was an irrigation plan in China called Red Flag Canal. Google it today and you will see a lush green

mountainside with a canal of water, a nearby tourist center attracting countless amazed visitors, and celebratory parasails all over the sky. Disregard the captions labeling this as one of the "senseless projects undertaken in China by uneducated peasants with primitive tools." Senseless? It was a dream realized in the 1960s by young people in a desert region so barren and dry that old people committed suicide drinking kerosene to save water for the children. The young dreamed of bringing water to their villages from a river 60 kilometers across the Taihang Mountains and defied government orders to desist because it was impossible. I saw it in 1974, just as it was being completed: water pouring through mountain tunnels, down snaking canals, over aqueducts larger than any I had seen in Italy. There were huge constructions made from blocks of stone chipped with homemade hammers and chisels forged from iron smelted in mud-brick ovens of barren red earth. Tunnels were dug with homemade dynamite, pickaxes, and shovels. They also built small generators, providing the village with electricity wherever the water fell three feet or more. The local people proudly showed us black-and-white film of the entire endeavor (which the youth had managed to chronicle).

5 ECONOMIES ARE BEGINNING TO BE MEASURED IN QUALITY OF LIFE.

A few years ago, the king of Bhutan announced that his economy would be measured henceforth in the happiness of his people. It seemed a shockingly radical, if not laughable, idea by many. Yet for nearly half a century, Hazel Henderson has crusaded for "quality of life indicators" as far more sensible measures of an economy's health than the GDP/GNP measures of money. Why should the cost of oil spills, psychiatrists, or toxins in our foods be counted as economic benefits, when we should be focusing on education, healthy ecosystems, and preventive medicine? Has the creation story about an entropic universe so pervaded our thinking that we cannot see our way to win-win economies? To a large degree, the answer has been yes, but now we are finding countries from Bhutan to Brazil looking to quality of life measures as a real alternative that can help solve debt crises and bring true benefits. Once a nation's mind is focused on positive economics, it will be possible to create them on ever larger scales.

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6 WE HAVE THE KNOW-HOW TO SHIFT TO SUSTAINABLE ECONOMIES.

Digging up fossil fuels that nature had long buried was a quick and literally dirty way to build technological economies of scale. But it has proven to be a highly unsustainable path. Supplies are running out, and the resulting pollution is both choking us and creating global warming. Fortunately, nature role-models a better way. As Janine Benyus has shown, we could create natural “biomimicry” economies based on carbohydrates instead of hydrocarbons, avoiding the 96 percent resource waste of expensive “heat, beat, treat” production processes that currently create nonrecyclable products. This past year, a man demonstrated on New Zealand television how his motorcycle runs on water, and a friend of mine, also in New Zealand, has spearheaded a zero-waste project nationwide, as have Australia and several European nations. Amory Lovins, Hunter Lovins, Paul Hawken, and William McDonough have all shown us practical ways to implement a natural capitalism of sustainable technologies and products, with 100 percent recyclability. Tachi Kiuchi and others show corporations how to shift from shareholder accountability to a stakeholder accountability, in which creating value for the poorest people on Earth is the sustainable path to good business returns. In short, we humans have all the intelligence and knowledge we need to create clean, sustainable economies that work for everyone, with no limits on new technologies except that they be nontoxic and recyclable.

Stop for a moment to ponder the liberating potential in that last statement and perhaps you will begin to share my boundless optimism.

7 GLOBAL WARMING CAN BECOME OUR GREATEST PEACE PROCESS.

Last but far from least, the greatest threat looming over humanity right now can be a positive opportunity. While I believe that we humans are responsible for some degree of the global warming now indisputably measured, it is more important to face its challenge than to argue about its precise causes. I know of no way we can reverse the process, now that a positive feedback loop is well underway. The warmer it gets, the more ice packs and frozen

tundra melt; the more they melt, the warmer it gets, because diminishing ice packs reflect less and less heat away from the Earth. Because nature is a vastly complex living system, not an easily predictable mechanism, estimates of how much the oceans will rise and how long it will take vary. There will likely be another mini ice age in Europe, for example, on the way to greater heat overall, because of the threatened Gulf Stream’s very possible submergence. With most of our huge urban complexes located in coastal areas, even the most conservative scientific predictions for the end of this century imply that the necessary relocation of hundreds of millions of people must happen.

The good news is that people are at their best, their most peacefully cooperative behavior, in natural crises, and a crisis of this unprecedented proportion will command all our resources. We have some time to work on the international cooperation required to get those great cities uphill and to deal with climate extremes, but we cannot waste time getting this process underway. Unsustainable literally means “cannot last, must be changed.” Global warming will bring this home like nothing else can, and it will provide us the opportunity to start over on a higher plane—literally and figuratively. I hope humanity at this century’s end will see global warming as the crisis that brought us together in peace at last. I imagine that the new housing, health-care, and education policies, economic activity, arts and entertainment, and ecosystem restoration will be sustainable and awesome examples of our artistic genius for elegant simplicity. And I see poverty erased in this process, as new win-win economics are implemented.



Thus have I gained and sustained my optimism as a humble student of our living universe, our living Earth, which clearly shows us the way out of our adolescent crisis into a mature global future. The sooner we create our vision of all we desire, set our intention to implement it together, and put our individual capacities into collective action, the greater our chances of success! 🌍

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