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BIOPOLICY — BUILDING A VISION OF HOPE AND TECHNOLOGY AS THE TOOLS FOR FUTURE SOCIETY

Abstract: In order to accelerate cooperative climate action, leadership in the 21st century irrevocably needs to take on a new role, identifying the mitigation of global warming as a moral imperative for future generations. Time is running out, and the urgency of addressing the implications of a catastrophic shift in the global climate system is made obvious every second. To respond to this challenge, the world has to act forcefully and quickly to ensure a climate-resilient and sustainable future.

Science and technology offer unlimited solutions in building resilience to climate change. We just need to take action. The „bio-assessment” of technology and the cooperation of *techne* — the arts — and technology can provide the momentum necessary to free our vision and imagination so we can address urgent global problems with a view to saving *bios*, all life on our planet.

To shape tomorrow’s sustainable world, a life-supporting paradigm needs to be placed at the core of technology, policy and education, and to form the basis of thinking and action for every citizen. Biopolicy with climate change mitigation at the heart of decision-making can help to advance technological innovation for the benefit of the environment and shape the next generations of world changing leaders by building a vision of hope.

Key words: *climate change, biopolicy, bio-assessment of technology, technological innovation, sustainable future, renaissance of values*

BIOPOLICY — ENCOURAGING A CLIMATE RESILIENT SOCIETY

Technology has always served as *a revelation of the truth*. Its ramifications have a huge effect on society, one that we are only now beginning to grasp as we unravel the mysteries of the *macrocosmos*, the *cosmos*, and the *microcosmos*. These new dimensions increase society’s possibilities for growth and knowledge, but also lead to unprecedented challenges. Are we the new *Phaethon*, *galloping towards our own*

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destruction by the burning sun, or can we use the light of wisdom and progress to build the knowledge we need for a more resilient and sustainable future?

Neutron or galaxy

*Galaxy or galaxies
are small dimensions
not infinity*

*Neutrons are small
very small
not infinity*

*And what am I
a neutron to the galaxy
or a galaxy to the neutron?*

A. Vlavianos Arvanitis, 1983

The choices and opportunities offered by technology are endless. The potential has always been there, but now we also possess the tools to understand it, which *creates enormous ethical responsibilities*. With the geometric progress of ICT, everything is moving faster than we could ever imagine. The internet revolution has a *profound effect on the way we think, work and live*, creating a *knowledge-driven economy* with an ever-increasing proliferation of information in both scale and scope. This staggering progress also poses new dangers and *threats for — all life on our planet —* as the technology exists to destroy life on Earth within seconds. *Lack of perspective and vision* in the application of progress can cause irreparable damage. This shortsightedness is evident in divide-and-rule policies, where differences are considered a threat and neighbors are declared enemies. Instead of viewing diversity as a menace, we need to consider it an enrichment, and *technology should be deployed as a means of saving life globally*.

The challenge to protect bios is the *core of „biopolicy“ — policy with the environment at the heart of decision-making*. Unfortunately, precious time is lost and climate change mitigation is becoming an increasingly difficult task, as our ability to keep up with environmental destruction is fast outpaced. The recent decisions at the *COP 21 meeting in Paris* are, however, *encouraging, as world leaders agreed on a common target* for a global climate agenda. Successfully addressing the economic, environmental, and above all, the crisis in leadership, needs this *positive vision in order to unite world leaders in a joint cause*.

COMBINING AND TECHNOLOGY

Devising a comprehensive solution to climate change tests our social, political and economic institutions beyond their current capacities. The *impacts of climate*

change will reach deeper and deeper into human society over the coming decades, forcing the development of policies to reduce environmental dangers. Searching for and developing better, cleaner and safer technologies requires challenging the way we think about the entire basis of modern society.

It is evident that the *models of the past are not adequate* to help us deal with today's expanding challenges. A coordinated and collaborative approach, effectively *combining all stakeholders*, is essential in order to limit the effects of uncontrolled growth on society and the environment and *catalyze change*. *Ethical guidelines*, such as the *Hippocratic Oath* in medicine, need to be developed in every profession. If we comprehend that these inspirational dynamics have to include the *cooperation of — the arts — and technology*, we can create a vision of mutual understanding for all the positive forces to *combine, interact and contribute to climate change mitigation*.

The *role of the arts* is vital in this context, as their active engagement can lead to an *enhanced intellectual and emotional awareness about climate change*. Artistic expression has the potential to *transcend the boundaries of the cosmos* and help us to be inspired by *the marvel of the microcosmos, the world of cells and molecules*. A worldwide *creative arts competition in nanotechnology* can enhance this potential by pioneering new forms of artistic practice in any field or cross-disciplinary activity. This intersection of *techne* and technology in the struggle to reverse current trends and restore the balance of life with the environment *rests on the participation of every individual*, whether governance expert, academic, thought leader, business executive, worker or student.

BIO-ASSESSMENT OF TECHNOLOGY

The struggle to solve the climate change problem indicates that there is a pressing need for ethical guidance which is not satisfied simply by applying conventional approaches to the complex and novel problems of the 21st century. *Breakthroughs in science and technology have greatly facilitated better living conditions*, increasing the standard of living worldwide. On the other hand, consequences such as water and air pollution, deforestation, large-scale farming, as well as developments like cloning and gene-manipulated food, have caused *grave fears for the future of humankind and for the continuity of bios*.

The implementation of mitigation and adaptation strategies requires a range of different disciplines and skills, and, in particular, *imagination and innovation*. *Technology expands human potential*, yet it can have disastrous consequences if it proceeds without concern for its environmental impact. Uncontrolled progress has opened a *Pandora's Box* of environmental destruction, but we also depend on technology for our transition to a climate smart economy. The „*bio-assessment of technology*,” as promoted by B. I. O. for the last thirty years, involves *dialogue* and the re-evaluation of priorities in order to support development that respects and helps bios. Based on a *thesis, antithesis, and synthesis of new ethics and values*, the goal is to achieve economic and technological progress that improve our interaction with the environment and protect all forms of life on our planet.

The bio-assessment of technology serves as the *vehicle to transform scientific and economic progress into cleaner and sustainable endeavors*. In this context, the bio-assessment of technology encourages climate-smart development, comprising, *renewable energy, climate change adaptation, fair trade, green jobs and corporate social responsibility*.

The progress of technology is rapid, necessitating new ways of administration and experimentation. A *global center for the bio-assessment of technology*, where *specialists can convene year round* to deliberate and share ideas, would better equip governments and policymakers with the needed guidance and vision to develop and implement strategies that *combat the effects of climate change at all scales of society*.

INNOVATION FROM BIOS FOR A FUTURE SOCIETY OF HOPE

Human history can be traced back a few thousand years only. The history of life, however, extends for hundreds of millions of years. *Life has been tested in unlimited varieties* and the most viable species have survived through the powerful selection of evolution. Living systems and natural processes are therefore ideal models for *technological innovation that supports the environment and all life on our planet*.

The *awe-inspiring process of evolution*, from the first anaerobic bacteria to the incredible biodiversity we see today, has involved billions of years. If we compare the evolution of life on Earth to a twenty-four hour day, the presence of humans has occurred in the very last fragment of a second.

The *amazing mechanisms of photosynthesis transformed the potential for life*. Once the first aquatic photosynthetic organisms appeared, free oxygen entered the atmosphere. It combined with oxygen molecules forming the ozone layer, which changed the conditions of natural selection for all organisms on our planet and allowed the radiation of life on land.

Today, as we delve into the *quest for new alternatives*, we must consider the *perfect efficiency of the cell*, one of the best examples of community survival, as evidenced by the compartmentalization and cooperation among its separate structures. Under the cryptographic code control of the nucleus, many organelles, enzymes and complex metabolites suspended in the cell's cytoplasm function with the greatest harmony in order to maintain a stable environment. Ribosomes interpret the genetic code and synthesize proteins by binding amino acids together. Mitochondria, the cellular power plants, burn fuel in dozens of small steps and produce energy with virtually no loss. Chloroplasts, the solar battery system of plant cells, convert sunlight into food and energy, and release oxygen into the environment. Perhaps *technology in the 21st century can draw inspiration from these fundamental biophysical principles* and replace the uncontrolled „burning” of energy sources with *efficient instruments such as those prevalent for millions of years in the evolution of life*.

Innovation is key in order to inspire progress. Investment in the use of climate friendly technology can facilitate the *transition to a development path* that addresses *climate change efficiently and effectively*. Buildings that not only conserve energy but power their own requirements through *renewable energy sources*, could trans-

form urban centers so that they can get the most out of the land, water and energy they actually use. The production of food with a minimum use of resources *limits the pressure on the environment* and makes food affordable for the poor. The preservation of seed genetic resources *ensures food security*, as well as better quality and output in food production. As promoted by B. I. O. since 1985, *local Genetic Banks* can *protect endemic biodiversity* through seed conservation and seed exchanges among farming communities, while also supporting sustainable farming systems. Technology for the protection of marine resources *preserves the integrity of ocean ecosystem services* and can help to restore the CO₂ absorbing capacity of the oceans, currently compromised by acidification. Biotechnology and nanotechnology are *engineering amazing new solutions* for climate change mitigation in fields such as clean energy and production, which can decrease the rate of global warming. *The more diversity, the more options* will be available to *respond to changing conditions and adapt to future challenges*.

BIO-EDUCATION — THE ROLE OF THE INTERNATIONAL UNIVERSITY FOR THE BIO-ENVIRONMENT

Education is a powerful tool for the *welfare of present and future generations*. It can help to achieve an inclusive approach to climate change mitigation by instilling *environmental values and ethics* in all academic disciplines and professional initiatives. This aim spurred the creation of the International University for the Bio-Environment (I. U. B. E.), which B. I. O. launched in 1990. The I. U. B. E. seeks to vaccinate every human endeavor with a love and appreciation of bios, imparting this message to students, professionals and decision-makers around the world. It also seeks to *promote a new concept of „profit,”* comprising the environment, culture and quality of life, as well as a unifying *bioculture, where science and the arts, can catalyze a climate-resilient society*.

Fighting the trend towards over-specialization, the I. U. B. E. seeks to *open up all areas of study and training to climate-smart development*. This is being implemented to a great extent through a highly successful e-learning program, which has been running with participation from 130 countries in order to sensitize people everywhere on matters such as *reversing unemployment, creating „biopolies” — cities with zero pollution* — using *green technology in energy and transport*, addressing *access and equity issues for people with disabilities*, and producing *safe and sufficient food*. The wealth of *educational material and resources* placed online and the breadth of topics offered by the program provide participants with the *freedom to cross boundaries* and to discover intellectual and *creative thinking processes spanning several academic disciplines* and featuring bios as a common point of reference. Courses are continuously updated to create new opportunities for green jobs and skills.

Also in the context of bio-education, B. I. O. has launched the *Youth Bios Olympiads*, which are being held annually in St. Petersburg since 1995, with the participation of thousands of school children and young adults from several countries. The Youth Bios Olympiads inspire the young to *embrace synergy, cooperation, and*

peace promoting values, while promoting cultural development that enhances the understanding of the urgency of protecting all life on our planet. The ultimate goal is to *strengthen education and learning for all members of society*, so that all available resources are utilized with local and global development in mind. This is an *ongoing process* that contributes not only to individual wellbeing, but gives *economic results and benefits all stakeholders*.

INSPIRING A RENAISSANCE OF VALUES IN AN ERA OF METACAPITALISM

Unlimited arrogance and greed are leading us to destruction, even though the stunning progress of science and technology is providing choices to correct social imbalances, conflict, and disruption. Our lack of vision has resulted in massive disasters and catastrophes, but maybe the common threat of climate change can provide the opportunity for joint action, allowing *biodiplomacy — international cooperation in environmental protection* — to flourish. *Differences* in biodiversity, culture, religion, philosophy, are the *wealth of humanity*. In the whole cosmic scheme, on the scale of space and time, Earth is the only planet we know of where life exists. We should *deploy technology to protect environmental resources, and to build peace and mutual understanding*. We have to cease viewing our neighbor as the enemy, and *join forces in the war against climate change*.

If science and technology focus on our interdependence with each other and with all forms of life, society will be able to exit the crisis in values and move into a „*New Renaissance*.” People, governments and organizations everywhere can mobilize a *new vision* in leadership. A vision bypassing the desire for enormous economic and political power, for the benefit of a long-range commitment to save life on our planet. Awakening this urgency for *inspired leadership* can help to defend society against the challenges of today while *making the most out of the opportunities of tomorrow*.

It is high time we moved into a *period of metacapitalism*. The goal is not to threaten vested interests but to inspire and mobilize change. *Shifting from stagnant and bureaucratic patterns to an era of inspiration* relies to a great extent on motivating the *1% of the population who hold 50% of the world's wealth* to make a *voluntary commitment* to invest in securing the continuity of the unique gift of life, an investment with staying power that will be *appreciated for millennia*.

CONCLUSION

In our unprecedented drive for economic power, we have forgotten the value of a *vision of hope and mutual understanding*. Despite decades of investigation, we know of no other planet in the universe where life exists. This makes it all the more urgent to elicit a global commitment to protect the continuity of bios.

Times of crisis can also become opportunities, spurring the search for the proper perspectives for enlightened leadership in every sector. *Biopolicy catalyzes tools and guidelines* for the promotion of *dynamic relations* between the environment, socie-

ty and policy, and inspires people everywhere to take urgent and concerted action to mitigate climate change and save life on our planet.

Bioculture can motivate us to deepen our culture of innovation and entrepreneurship through the application of new knowledge and the development of new thinking and action. By *mobilizing an educational and cultural commitment*, bioculture can encourage science and technology to bring benefit to society. Literature and the arts can be an enlightening force in this effort, supporting mutual enrichment and helping us to view our differences as a source of inspiration provided by bios. *and technology offer countless solutions* to our current problems. We just need to take action. *The choices are infinite*: renewable energy, ocean clean-up, environmental technologies, food security, health, education, zero-emission cities, better living conditions for all. Investing in sustainable technologies can integrate the recovery of the world economy with efforts to limit climate change and reaffirm the *positive link* between *climate resilient development* and our survival on this planet. To be successful in this effort, we must draw inspiration from the miracle of life, as it is our *ability to be inspired that will turn the tides and make a difference*.

Life on Earth

*Thirsty the soil soaking polluted water
Blood of the innocent colors the flowers*

*Enough, whisper the leaves
Enough, cry the threatened animals
Enough, speaks the wave caressing the shore with wisdom*

*Life is harmony, a link for us all
Send messages of love not hatred
Share in the joy
Call out for peace*

A. Vlavianos Arvanitis, 2007

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