

Manifesto in defence of biological and human diversity

Tomsk (Russia), May, 15 2017

Biological diversity is what makes the Earth an extraordinary planet, in every sense. Life itself is the most extra-ordinary thing may exist. There is nothing ordinary in her. In the universe, as far as we know, or at least in our galaxy, life is the exception rather than the rule. And even if one day we will be able to document the presence of living beings on other planets, they too will be an exception. **The appearance of life is a phenomenon that have always fascinated human being, since without it the human species would never exist** and no hairless biped would ever have studied with such admiration, and destroyed with equal force, its diversity.

Biologists today agree that **we owe all that we are to the existence of the diversity of life**; there would be, in fact, no chance for human beings to exist on this planet if the incommensurable diversity of living beings on Earth had not evolved with such incredible power to populate every corner of the continents, from polar caps to the most arid deserts, from steppes to prairies, from forests to temperate seas, up to explode at the tropics, in lush wetland forests full of species, and among coloured coral reefs.

The same diversity represents a mystery to the very existence of life. Why did evolution lead to the "endless forms most beautiful," as Charles Robert Darwin called them, instead of letting a unique, unbelievably adapted, monstrous species dominate? To ensure the functioning of ecosystems, some will answer. To allow resilience to the disturbances, others will say. To resist catastrophic events, remaining people will suggest.

Because diversity is the fundamental and emergent characteristic of life itself, much more simply.

Life tends to diversity. Diversity to stability. Stability, albeit dynamic and never in constant equilibrium, to maintaining the conditions that guarantee life. A monospecific planet would be an unspecific planet. A dead planet!

Scientists have recently demonstrated that **biodiversity and diversity in general are autocatalytic phenomena**. That is, life requires other life so that it can continue to exist. The very meaning of life, even that of all human beings, is to ensure not only their own species, but every other, to continue to exist. For this reason, where the first living organism appeared on the Earth or on other living planets, this has certainly given rise to other infinite and beautiful forms.

Recent evidence of **a biological evolution sustained mainly by symbiosis** (genetic, physiological and behavioural) processes reshapes the overemphasised role of competition in Nature. How sad is the world seen from the eyes of reductionists, composed of selfish genes of individuals constantly struggling each other to ensure their survival, in a universe in which life has no meaning. Instead, as the biologist Lynn Magulis said: *"Life did not take over the globe by combat, but by networkiing. Life forms multiplied and complexified by co-opting others, not just by killing them."*

Yet, in recent years, **the extinction rate of species and the loss of ecosystems have become alarming in every corner of the planet**. Biological diversity is reduced, day after day, due to the shameful human actions that aim at short-term profit and unconditional economic growth.

Equally, human diversity is increasingly threatened and outraged in many parts of the world. Episodes of violence against those who are considered "diverse" are on the agenda: a new wave of racism against the "diverse peoples" is affecting many nations considered as civil societies; abuses, torture, violence and killing are committed against those who manifest "diverse sexual

orientations"; wars, assassins and assassinations are the means to hindering and fighting "diverse cultures and religions"; abuses and exterminations erode the indigenous people of Earth because they are accused of belonging to "diverse civilizations".

The elimination of biological and human diversity seems to have become the ultimate purpose of our species.

It is therefore fundamental that **we as scientists join our forces with civil society's protests** in defending the rights of human diversity and that **civil society joins scientists** in the struggle for the conservation of biological diversity.

It is imperative for us as human beings to understand that equality is in needs, in feelings, in rights and in duties, in belonging to the planet Earth as citizens of the world, free of the rampant nationalism, respecting universal and natural laws, while **diversity represents the invaluable resource of that universal exception, which is Life**. Until our species won't be able to understand that Nature has endowed with beautiful and endless forms the beings that inhabit our planet, so that they serve to maintain the conditions that guarantee life itself and, doing so, life perpetuates and prosper thanks to its diversity, and until we won't understand that this is the sense of everything and even of our existence as human beings, **we will never feel really alive. Never feel completely free.**

Those same detractors, who alter the message of equality and diversity left by Darwin two hundred years ago and use it as an excuse for a social Darwinism that authorizes mass slaughters to ensure "the survival of the best", to "eliminate the diverse", miss the great opportunity to seize the message in the beauty of a light or dark skin, a yellowish or olive skin, a distant and fascinating tongues, round or pointed eyes, wings or paws, feathers or ridges, leaves or needles, men who love other men or women who love other women, people praying in mosques or hands clinging to a crucifix, red flowers or black seeds, monks kneeled in front of a statue or an altar.

They forget that **diversity makes the Earth alive and life makes the Earth diverse.**

This is a heartfelt appeal to scientists from around the world, to civil society and to heads of state and government: let us stand in defence of the biological and human diversity!

Roberto Cazzolla Gatti, Ph.D.



*Environmental and evolutionary biologist
Associate Professor of Ecology e Biodiversity
Tomsk State University, Russia*