JUST LIKE THE GODS
sci-fi biology for everyone

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(opening pages of book published in Slovart, Bratislava, 2001)

The biological revolution

The French philosopher, Claude Levi-Strauss, proclaimed that a course of rapid technological and industrial progress within a society use to create a snowball effect on the rest of its culture as well. In the 1960s, Stanislav Lem described this phenomenon in his book, *Summa Technologiae*, as a "technical explosion in full expansion." The technical revolution of 20th Century has been closely followed by biological revolution that we are witnessing in 21st Century. With the advent of the new millenium, major scientific and biological discoveries have occurred, breakthroughs that can alter every stage of the human lifespan from birth to death. The need for and role of a human couple for reproduction to occur is diminishing with the advent of assisted reproduction. Even the concept of what constitutes motherhood now has been challenged. Sex-change operations provoke questions of gender**.**

Until recently, eugenics was largely associated with the twisted Nazi ideologies and expressly condemned. Today, eugenics hold a new connotation as the possibility of human cloning looms in our near future. Cloning occurs everyday in the plant and gardening business. As long as cloning was relegated to flower hybrids, it seemed a harmless and innocuous practice, but when genetically altered fruits and vegetables appeared at our tables, people sat up and took notice. Scientific developments didn't stop with the cloning of foodstuffs and began to delve into cloning within the animal kingdom. Would the cloning of human beings be not far behind? Transgenic animals have been regarded as a new species of living being created by Man. The first patents on these live species have already been rewarded.

This entire biological revolution, however, started at the cellular level, utilizing microorganisms. These bio-technologies can become, on one hand, invaluable aides to humankind but, on the other hand, can pose a deadly threat in the form of biological weapons. We have managed to subvert Nature into two forms: as a factory (mono-cultural crops, forests) or museum (national parks, reserves, zoos).

The efforts to extend human life have led towards the production of artificial organs. From this point, can the creation of an artificial human beings not be far off?

The results of these biological revolutions provoke many ethical questions, with one of the most sensitive questions being that of euthanasia. This dilemma would never have come about if it had not been for the bio-technological advances made in the past 25 years. Man has already attempted (and achieved) control of the moment of birth; will we soon come to control the moment of death?

You will be like the Gods

In a book by the same title, Erich Fromm noted biblical expulsion of Adam and Eve from Paradise. God punished them for eating the fruits of the tree of knowledge and said "Humans become one of us now, eating fruits of tree of knowledge they now can distinguish good from evil. They should not reach out for and eat the fruits of the tree of life and live forever!"

Science has already reached the fruit of the tree of life on our plates. The question remaining now is: how will we use this fruit?

Throughout history, all of human's conquests took place within natural and biological limits. Over the past century, we have experienced a phenomenal wave of technological advances which until recently, were still largely confined to a limited sphere. In today's world, with all of these scientific advances, the rules have changed. Even the concepts and definitions of life, death and humankind themselves have been challenged.

We start to tinkered with our biological fundamentals, so that the old pyramid of human's construction of the "self" has been altered. Previously, the top of this pyramid was inhabited by Saint-Exupery's definition “Man - it means relations." Until just recently, while slowly changing our relations with each other and with Nature, our biological clay was left alone.

"Never before were we so powerful. We are capable of altering the lifeform itself. We do not know of any more essential human capability--not even the threat of nuclear weaponry. We are aiming for technical control over biological evolution."

This is how, during the communist era of 1980s, a Slovak writer expressed his delight with the progress that biological science had made. In an aggressive polemics against Feuerbach, Karl Marx, the official leading philosoher at that time, declared "Philosophers used to interpret the world. However, the point now is to change the world." Nowadays after the decline of communism, the new slogan has evolved to "The point is not to change the world. The point is to understand it."

However, it seems that both of these contradictory declarations will soon become reality in the face of our biological advances. Our world is changing so dramatically that we are not able to fully grasp the impact of it all. Science has become a new evolutionary phenomenon in itself. The explosion of molecular biology and experimentation in genetics today reminds the former boom in physics, that ultimately led to the development of the nuclear bomb. What had been previously only written about in science-fiction novels has already met its creation. For Jules Verne´s and H. G. Wells´ contemporaries, the technically unimaginable “*Trip to the Moon*” become a reality in the third successive generation. Truth has become stranger than fiction. But as human civilization continues to construct these new fantastical higways, he must be prepared to meet its first curves. Are we ready to deal with the ethical aftermaths of these discoveries?