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Need For a New Global Humanity-Centered Paradigm

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Summary

Salient features of contemporary world are outlined: global, rapidly changing, interdependent and characterized by uncertainties that we currently do not understand. It is shown that the present paradigm is not sustainable and that it keeps the world constantly at the edge of a catastrophe: destruction of our civilization. The necessity of a new global paradigm is emphasized. It is stressed that guiding principles of the new paradigm should be human-centered and humanity-centered.

Keywords: global contemporary world, new paradigm, human-centered and humanity-centered paradigm.

1. Introduction

The contemporary world is global, interdependent and rapidly changing. The rate of change is much higher than at any time in history [1]. All of these features are science-technology generated, and consequently generated by human beings. It is justifiable to label our current era the Anthropocene era [2]. All indicators of human activities show dramatic change during the last 100 years: world fossil fuels consumption increased by 16 times, fishing activities increased by 35 times [1]. World population has almost quadrupled during the 20th century: from about billion and a half to six billion [3]. However, decreasing fertility rate below 2.1 caused population explosion to turn into demographic transition [3], with population decreasing in many countries. Transformation of society from 1800 to 2010 and from 1950 to 2010 is shown in Table 1 [4].

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Table 1. Transformation of society and work [4]

	1800	2010
World population	978M	6900M
Urban	3%	49%
Life expectancy	27y	69y
GDP/c	1950: $2000	$6500 (1990 international dollars)
World trade	3% WGDP	27% WGDP
Agriculture	85% 1950: 67%	33.5% global workforce 2% USA workforce
World energy use:	1990: 102,000 TWh	142,300 TWh (2008) [5]

Humans are also changing. Biological evolution of humans accelerated 100-fold in the last 10,000 years: e.g. success of mutation causing to digest lactose over the last 3,000 years, and genes controlling the glucose metabolism in the brain recently evolved, possibly being essential for the human brain growth to the size twice that of our nearest cousin – the chimpanzee, and possibly suggesting why humans do and chimpanzees do not have diabetes. These changes are small in comparison with recent advances in life sciences: transplantations, pacemakers, stem cells: "cerebral organoids" [6], regenerative medicine: flat (skin), tubes (blood vessels), hollow organs (bladders made from patients' own cells implanted), solid (kidney, heart) [7], CT and PET, synthetic biology. Julian Huxley stated: "Evolution on this planet is a history of the realization of ever more possibilities. Through new knowledge it has defined man's destiny and responsibility (…) It is as if man has been appointed managing director of the biggest business of all – the business of evolution." [8] The intertwining among humans and machines (the term "machine" has to be considered in a broad, generic sense) is adding a new dimension, not only in terms of nanotechnology in health care: nano-robots, nano-bio-sensors, using nano-robots to "feed" cells and extract waste, but also in the expectation that by 2040, the human body 3.0 will be able to modify its shape, include superior cyber-implants, and the machine will become a true part of our ecosystem [9].

2. Natural and human capital

We are rapidly destroying natural capital. In 1960 human demands on our ecological system amounted to about 70%, in just ten years it reached 90%, and now is well over 40% larger than the Earth capacity. If we continue with business-as-usual [i)], we will

"need" three Earths by 2050 [10]. Countries contribute to the destruction of natural capital in different ways. Figure 1 displays ecological footprint vs. human development index (HDI) [11] (HDI compounds GDP/c, life expectancy and education data). The vertical line at 2.2 global hectares per capita (Gh/c) marks the Earth's full capacity. HDI is almost constant from Gh/c=3 on, and therefore, without decreasing their HDI, countries could decrease their ecological footprint to about 3 global hectares per person! Wijkman and Rockström demonstrated that we are bankrupting the Nature [12], most notably, that we are causing enormous losses in biodiversity – the sixth great extinction [ii)] of species [13]. For instance, the number of local rice varieties being cultivated in China has declined from 46,000 in 1950 to only 1,000 a few years ago. Norway is developing a secure storage in Svalbard, north of the Arctic Circle, as a precautionary measure for the future. Quoting a conversation with a peasant, Pope Francis said: "God forgives always, humans sometimes, Nature never."

Humans have always migrated and successfully colonized the Earth. Can we just go away – go to other planets, as we had left East Africa and then colonized Australia and the Americas? That is a much more difficult task now than it was 50,000 years ago or, for C. Columbus, 500 years ago. For at least the next 50 years the Earth will be our only home. Destruction of natural capital leads to destruction of human capital. WHO showed in 2004 that three million persons die each year because of car and industrial pollution. Speaking at the Club of Rome conference in 2007, Rodrigo Rato, then managing director of IMF, emphasized that climate change, demographic transition and financial instabilities are the three most serious problems facing humankind. I would add the danger of weapons of mass destruction (WMD), huge inequalities and very low employment rate.

The *Bulletin of Atomic the Scientists* [14] put in 1947 on its front page a doomsday clock at 7 minutes to midnight. In 1953, after the USA and the USSR tested their H-bombs, the doomsday clock was put to 2 minutes [iii)]. The end of the Cold War in 1989 brought it to 17 minutes to midnight, but last year they changed it to 5 minutes, and on January 22, 2015 to 3 minutes to midnight: compounding WMD, East-West increasing tensions and seriously threatening destruction of natural resources: ecological footprint and climate change. During the last year there were 11 serious West-Russian Federation incidents [15]. In addition to East-West confrontations getting particularly serious in Ukraine, the threat of terrorism, compounded by failed states and puppet regimes, and by ISIL, increases the danger. In order to avoid direct military confrontation and allegedly to reduce casualties, sanctions have been employed recently. Based on UNICEF data, Figure 2 shows that sanctions imposed on Iraq in the ten years from 1990 to 2000 caused the deaths of more than half a million Iraqi children.

Human development report in 2013 demonstrated that wealth inequalities significantly decrease human development index [16] (see Table 2). Wilkinson & Pickett [17] showed that all health and social indicators deteriorate as inequalities increase: increasing inequalities lead to lower life expectancy, higher crime rate, higher infant mortality and higher imprisonment rate. Over the last century GINI index has increased in the USA from 35 to 45, in China from 30 to 40, in Russia from 20 to 40. The top earners in India are now making more than 12 times what the bottom 10% makes, compared to 6 times two decade ago. The wealthiest 400 Americans have more than the bottom 50%. Compared to other OECD countries, the USA has the highest inequality of income, highest poverty rate, highest infant mortality, biggest prison population, highest homicide rate, biggest expenditure in health and largest percentage of citizens unable to afford health care [18]. In their own selfish interest, richer persons should decrease the inequality ratio to a reasonable value. Inequality has been a subject of numerous studies, from Plato, who argued for a 1:5 ratio, and J. P. Morgan, who allowed 1:20, to recent works of B. Milanović [19], J. E. Stiglitz [20], X. Sala-i-Martin [21] and Piketty [18]. Global distribution of wealth is quite uneven: the richest 0.001% have 30% of global wealth (about 17 trillion US dollars), while 99.9% of humankind has only 19% (about 10 trillion US dollars) [23]. Adam Smith wrote in 1776: "No society can surely be flourishing and happy, of which the greater part of the members are poor and miserable."

Table 2. Effect of inequality on human development index [16]

Country	HDI (ranking)	GINI	Loss in HDI due to inequality
Germany	5	28.3	6.9%
Austria	18	29.2	6.6%
Slovenia	21	31.2	5.8%
Croatia	47	33.7	15.1%
Montenegro	52	45.3	8.0%
Serbia	64	27.8	8.0%

Citizens of the EU responded that the most important issue facing their countries is unemployment (48% in spring 2014 and 45% in autumn 2014). Economic situation comes as the next one, and terrorism as a distant one with barely 2% in spring 2014, and 8% in autumn 2014. The EU declared 75% employment rate as its goal. Many members are down to barely above 50%. Yet, while global population has increased by 164% from 1950 to 2007, global employment has increased even more – by 175%. There is a demand for jobs, for skills, not to speak of a huge demand for lifelong learn-

ing and healthcare for the population getting older and older, while still mentally active. Full employment is an achievable goal and it is imperative if human capital is to be saved [24].

3. It is the best of times, it is the worst of times

Charles Dickens opens his novel *The Tale of Two Cities* describing the times of the French Revolution by the following sentence: "It was the best of times, it was the worst of times, it was the age of wisdom and it was the age of foolishness, (…) it was the spring of hope, it was the winter of despair (…)" It sounds familiar. It should. Our times could very well be described by the same sentence – all the more so. We are undergoing and performing the most significant paradigm change – one more profound than American, French and October revolutions, comparable with huge Neolithic agricultural revolution, but while that lasted for thousands of years, the current paradigm change evolves on a much shorter time scale – shorter than our lifespan. Scientific breakthroughs develop in the most scientific disciplines, soon to be the most outstanding in economic and political sciences. Scientific breakthroughs are accompanied by technological and social breakthroughs. We witness great successes and great failures. Here is just a partial list of our great successes: decolonization, the end of the Cold War, fairly successful and stable UN system, spread of democracy and freedom (see Table 3), 115 countries (39% of world population) included in WMD free zones, numerous successful treaties: Montreal on ozone (1.1.1989, called by Kofi Annan "the most successful treaty"), land-mine Ottawa treaty of May 3, 1996 (although not ratified by the USA, Russian Federation, China, India and Pakistan), Biological weapon convention (1975) and Chemical weapon convention (1997).

Table 3. Freedom in the world [25]

(number of countries and population)

	1972	**2013**
Free countries	43	90 (3.1 billion people)
Partly free countries	38	58 (1.6 billion)
Not free	69	47 (2.4 billion)

(Of the 47, Somalia, Syria, North Korea, Uzbekistan, Turkmenistan, Eritrea and Equatorial Guinea are ranked worst.)

Although the number of free countries has significantly increased, all polls conducted during the last 20 years prove that people do not consider their countries to be governed by the will of the people. For instance, the Gallup poll showed in 2005 that

throughout the world 65% of all respondents consider that their country is not governed by the will of the people, the best being North America, where about 45% state that the country is governed by the will of the people, while the worst is the Middle East, where that percentage is barely 13%. A 2013 Gallup poll showed that about 48% consider that their elections are free and fair, but only 30% consider that their country is governed by the will of the people. The Gallup poll also showed that, while in 1953 55% of respondents considered that the UN was doing a good job, and only 30% regarded it as poor, in 2013 it is reverse: 57% consider that the UN is doing a poor job, and 35% that it is doing a good job. This is also reflected in the trust in institutions. In the USA the medical profession and scientists, as well as religious leaders and the military are highly regarded, while politicians, businesses and the media are not. It is interesting to quote Thomas Jefferson, who in his letter to John Jay wrote, "the selfish spirit of commerce, which knows no country and feels no passion or principle, but that of gain" [26], and in his letter to G. Washington wrote about tendencies to confuse consumption with happiness [27]. The change in the trust in institutions is shown in Table 4.

Table 4. Trust in institutions in the USA (Gallup 2012)

	June 2002	June 2011	Change
Banks	47%	23%	- 24%
President	58%	35%	- 23%
Congress	29%	12%	- 17%
TV	36%	28%	- 8%
Military	80%	29%	- 1%
Police	60%	57%	- 3%
Church	45%	48%	+ 3%

Our failures are best summarized in Table 5.

Table 5. Casualties

Natural disasters in the 20th century: total casualties	10 million
Spanish flue	60 million
World War I	20 million
World War II	60 million
Korean and Vietnam wars	6 million
Congo Free State (1886 – 1908)	8 million
Democide in the 20th century [28]	262 million
Worldwide poverty (1990 – 2013) [29]	432 million

One concludes that worldwide poverty [29] has caused almost five times as many deaths in 24 years as all wars during the 20th century. Number of children, women and men killed by their own governments: democide [28] during the 20th century is three times larger than all war casualties. One can be tempted to conclude that the world order [30] based on sovereign structure (Treaty of Westphalia of 1648 following the Augsburg Treaty of 1555 with "Cuius regio, illius religio") is to be blamed. Yet, in the year 2000 all wars took 310,000 lives, compared to 520,000 lives taken by criminal action. The total of 830,000 is 1.5% of all 56 million who died that year, and it is comparable to 1.26 million who died in car accidents. These numbers are similar to those in 2002 [31].

There are 1.75 billion (25%) living in multidimensional poverty, and yet $4-5 trillion circulate daily in speculative affairs. Global financial assets amount to $225 trillion, three times more than the global yearly GDP. There are globally at least 200 million unemployed, and about 30% are under-employed and even more mal-employed. There are more than 500 million annual cases of preventable infectious diseases; 330 million urban households live in substandard housing and additional 200 million in slums. There is sufficient food to feed more than 12 billion persons and yet there is rampant starvation and malnutrition. Almost 1.5 million die annually due to lacking access to safe drinking water, and yet there are adequate and available life-saving medical technologies. Gandhi correctly said: "There is enough for human needs, but not for greed."

4. Paradigm change

In his book *The Structure of Scientific Revolutions* published in 1962 Th. Kuhn [32] reintroduced the concept of "paradigm" to describe "universally accepted scientific achievements that – for a time – provide model problems and solutions for a community of practitioners". The word paradigm, *παραδειγμα,* describing the "pattern used by God to create the universe", was used by Plato in his *Timaeus.* Kuhn used the term "paradigm" to describe profound changes in natural sciences, and – though frequently used everywhere – there is still a debate on how adequate the term is in social activities since concepts in the social sphere are polysemic, i.e. having multiple meanings (Larry Laudan, M. L. Handa and Mattei Dogan). We will distinguish between incremental changes, revolutionary changes and paradigmatic changes. An illustrative example to describe the meanings of these terms is what is referred to as the Copernican revolution. The description of movements of celestial bodies was extremely important in the Middle Ages since it was the basis of astrology and the main guide for action. The worldview of the first millennium was a geocentric concept that the Earth was the center and all celestial bodies orbited in perfect circles around the Earth. The essential values were centrality and immobility of the Earth and the circular motion. Since

the data contradicted, the system was incrementally improved by adding circles upon circles. History of astrology throughout the first millennium can be described as a series of incremental changes resulting in a very good description of celestial motions. A cumbersome system and a lack of beauty rather than facts prompted Copernicus to propose a heliocentric system. It did not provide a better description of celestial motion and, from a physical standpoint, it does not signify revolution: the system of reference was changed and that was all. However, it did provide a major philosophical change: the Earth was dethroned and the circle became just one among many "equally beautiful" curves. It is because of this profound philosophical change that we call it the Copernican revolution. It is actually the same word used to label American, French and October revolutions and many other – in a way, all three revolutions were similar to a frame of reference change. At the turn of the 20th century physical understanding underwent a paradigmatic change: theory of relativity and quantum physics. A few features of modern physics are: duality – electrons behave as particles and as waves, the basic law of the Nature is the Heisenberg Uncertainty Principle, and yet it allows, through relativistic quantum theory, predictions to accuracies of one in many billions and trillions, the phenomenon that one can go through a barrier is not only possible, but the true basis of all Nature, observer through the very measurement influences its outcome, there are jumps and continuity, time and space are intertwined, our universe expands and it underwent inflation, and possibly there are multiverses, and we are part of one universe made just for us: anthropic universe where all basic constants of physics are fine-tuned to assure the development of *Homo sapiens sapiens*. Describing the impact of modern physics, G. B. Shaw said: "My dogma of infallibility is destroyed!" There are several historical facts worth mentioning: Max Planck, founder of the quantum theory, and Albert Einstein, founder of relativity and Nobel prize laureate for describing the quantum phenomenon: photoelectric effect – both refused to accept all consequences of quantum physics, notably its probabilistic Copenhagen interpretation. Einstein used to say: "God does not play dice." He does! Einstein also said: "The most incomprehensible thing about the world is that it is comprehensible." But Martin Rees, astronomer royal in 2008 at the Academia Europaea annual conference in 2008 raised this question: "Are we capable of understanding the physical universe?"

We described to some extent the modern physics paradigm change to indicate a prelude of what is in store for us – possibly an equally paradigmatic change of *Homo sapiens sapiens* in a global, rapidly changing interdependent society. Pierre Teilhard de Chardin introduced the concept of singularity [33] to describe a future threshold beyond which artificial intelligence will exceed human intelligence: "We may well one day be capable of producing what the Earth, left to itself, seems no longer able to produce – a new wave of organisms, an artificially provoked neo-life." The concept of singularity

was popularized and considerably extended by Ray Kurzweil [34] and Vernor Vinge [35]. (Big bang is a singularity. It is possible that laws of physics change at singularity, and that they emerge, form immediately after singularity. Time loses its meaning and space collapses.) In a certain sense we are all cyborgs – unified organic and inorganic beings. For centuries we have improved our eyesight by eyeglasses, and now we improve our hearts by pacemakers, our missing limbs by bio-limbs, and we "enlarge" our brain by computers and language by e-communication. We are at the edge of becoming true cyborgs [36]. Just as modern warfare experts think about the unthinkable, so researchers at the Defense Advanced Research Project Agency (DARPA) contemplate, invent and make the unthinkable. Era of personalized medicine is already here. Human Brain Project was initiated ten years ago. Humans could resurrect our cousin Neanderthal man, and the mammoth, humans could make a superhuman being, considerably more creative and intelligent that we are. Are human beings are bringing humankind to a singularity – point where concepts familiar and basic today, as identity, privacy, I and you, countries, private property, market economy, sovereign nation states, become irrelevant [37]. We are creating a permanent revolution of creative activities, of changes[iv]. Six years after S. Morse received a message, N. Hawthorne wrote in 1851: "By means of electricity, a world of matter has become a great nerve (…) The globe is a vast brain." H. G. Wells offered a proposal to develop a "world brain" and in 1950 Teilhard de Chardin proposed the "global mind". Inter-brain-net is now a reality. Are we becoming a Frankenstein – an animal who became God, as Harari entitles the last chapter of his book?

5. Human-centered and humanity-centered paradigm

The new paradigm is mainly a politically new paradigm, and of course – paradigm change has to be done by us – humans. Even though humans have changed since Neolithic agricultural revolution: biologically and culturally, and continue to change more rapidly now, our feelings, our behavior, beliefs, interests, prejudices, understanding and attitude – our common sense is determined by millions of years of our history, when we were mostly hunter-gatherers. Our present common sense will continue to be the main determinant for at least the next 50 years. John Avery properly entitled his book the *Space-Age Science and Stone-Age Politics* [38]. Politics – the master science, as Aristotle correctly called it – is molded largely by our common sense.

Paradigm change in physics had two powerful guides: experimental data and beauty.[v] What can be the guide of the presently necessary political paradigm change? We argue: a human being and humanity. In all our cultures the Golden Rule, "love thy neighbor, as thyself" is the essential law. An Eskimo proverb says: "The best place to keep your food is your neighbor's belly."[vi] Ch. Darwin wrote in his *The Descent of Man:*

"As man advances in civilization, and small tribes are united into larger, the simplest reason would tell each individual that he ought to extend his social instincts and sympathies to all the members of the same nation, though personally unknown to him. This point being once reached, there is only an artificial barrier to prevent his sympathies extending to men of all nations and races." Humanity, the human being and the Golden Rule are the best guide and presently they obtain a deeper meaning. At first sight it appears redundant to stress humans, since it is so obvious and it is our own self-interest. Nevertheless, throughout our history and particularly today, as we have shown, humans are destroying and threatening humanity and humans: wars, violence, WMD, inequality, low employment and mal-employment, violation of human rights and human dignity, destruction of biodiversity and of cultural diversity, climate change, threatening ecological footprints – are examples of human capital destruction. By destroying trust, we destroy social capital and consequently human capital. As the destructive religious wars of the 16th and 17th centuries led to the *raison d'etat* concept, it is now vital to emphasize the raison *d'humanite* imperative!

Among all capital: human, natural and human-made, human capital is the most valuable (see Figure 3 [39, 40]). Indeed, "People are the real wealth of nations. The basic aim of development is to enlarge human freedom and choices so that people live full and creative lives. This must benefit everybody equitably." [41] Human capital includes human dignity, respect for their values, for their culture, but also the process of modifying their culture when it adversely affects human capital. Essential ingredients of human capital are freedom, options, education and curiosity (Aristotle: "All men by nature have a desire to know."), but also health and trust. Different from all previous revolutions that aimed to achieve "the end of history", the current political paradigm change is a permanent revolution through rapid changes, most likely continuing well into the 21st century, since there is no end in sight for scientific and technological breakthroughs. And science is just a part of our creative capacity. While natural sciences, and more and more social sciences, emphasize measurements, and it is possible to express in numbers that H-bomb is so many times more powerful than that based only on uranium fission, or than dynamite, and while consumption can be expressed in dollars or euros, many essential observables cannot be measured and expressed in numbers. Mozart's symphonies cannot be measured and compared with Shostakovich's, nor Leonardo's paintings to those of Picasso. Let us not allow that measurements so strongly urged by Lord Kelvin be reduced to "the fallacy of misplaced concreteness", as A. N. Whitehead warned.

Enlarging human capital implies stimulating and supporting scientific research and artistic creativity, it implies improving education on all levels. While previous revolutions emphasized the destruction of existing values and systems, it is necessary to be

careful not to throw out the baby with bathwater. The system that we have, though non-sustainable, had many virtues – and they have to be preserved at some level, just like classical physics remains perfectly valid in its narrow domain of validity. For instance, sovereign nation states are blamed for wars and for democide, but they have to be credited for ensuring conditions for the flourishing of art and science, for maintaining and developing culture. Can they do better? Of course, and they should. Two centuries ago, F. Schiller wrote: "Our century has given birth to a great epoch, but the great moment finds a stunned generation and even more stunned politicians" (*The Present Moment,* 1796). To paraphrase Clemenceau: "War is too important to be left to generals", let us stress that decision-making, political thinking and political actions cannot be abandoned to any special group, particularly if selected by a process that does not guarantee high qualities and devotion to humanity and humans. This is why Y. Dror argues for avant-garde politicians [42], who need to appreciate how small our knowledge is and that modifications have to be cautious and reversible, that we still do not understand uncertainties, black swans [43] plaguing our development.

Footnotes:

i) There will be no "business-as-usual" (BAU), since contemporary world is characterized by rapid changes. By BAU, we mean no paradigmatic change.

ii) During the last 450 million years the Earth has suffered five great extinctions. This is the first one caused by humans.

iii) Flying time of the ICBM between Russian Federation and the USA is of the order of 10-20 minutes (speed of ICBM is between 1 and 7 km/s). On September 26, 1983 Soviet officer S. Petrov observed a signal indicating an American nuclear attack. Fortunately, he correctly assumed that it could be a technical error, which indeed it was, and the world was saved.

iv) Harari's chapter 18 is called Permanent Revolution (both Trotsky and Mao contemplated about permanent revolutions).

v) Beauty of the physical world through evolution probably formed our standard of beauty. By being beautiful physical theory proves its consensus with the totality of facts/data.

vi) Realizing that animals and humans compete but also collaborate, J. M. Maynard, W. Hamilton, N. Tinbergen and R. Axelrod showed that the best evolutionary stable strategy is tit-for-tat: cooperate and never be the first to defect, retaliate only after your partner has defected, forgive and cooperate after retaliating just once. Altruism is an example of a non-zero-game, i.e. a win-win game.

References

[1] W. Steffen et al., Global Change and the Earth System: A Planet under Pressure (2004), Springer-Verlag, Berlin

[2] P. J. Crutzen, Nature 415 (2002) 23: P. J. Crutzen and E. F. Stoermer, IGEP Global Change Newsletter 41 (2000) 17-18

[3] World population was about 300 million in 1 AD; it reached one billion in 1804 and two billion in 1927. UN Population Division, World Population Prospect, the 2008 Revision. Decrease of fertility rates to below 2.1 in many countries led to a demographic transition phenomenon. Life expectancy is increasing by 3 month every year. In 2050 median age in Germany is expected to be 52, and population of PR China is expected to start decreasing in 2029. English king Edward I and his wife Eleanor had 16 children in the 13th century, and only 6 lived to be more than 10. Situation did not improve much in times of Peter the Great who had 12 children with his wife Catherine, and only two survived the age of 10. Sergei P. Kapitsa, Global Population Blow-up and After, Report to the Club of Rome, Global Marshall Plan Initiative (2006); Maddison, A., Statistics on World Population, GDP and Per Capita GDP, 1-2008 AD. Available online: http://www.ggdc.net/MADDISON/Historical_Statistics/horizontal-file_02-2010.xls

(accessed on 24 December 2010); Maddison, A., Statistics on World Population, GDP and GDP/c, 1-2008 AD. Available online (accessed on 24 December 2010): http://www.ggdc.net/MADDISON/Historical_Statistics/horizontal-file_02-2010.xls

[4] Ivo Šlaus and Garry Jacobs, Human Capital and Sustainability, Sustainability 3(1) 97-154, and references therein

[5] World Energy outlook 2012, IAE, Washington

[6] CNN 10/02/2013 – news

[7] J. Gallagher, BBC News 2014

[8] J. Huxley, Transhumanism, in New Bottles for New Wine, London: Chatto & Windus (1957) 13-17

[9] Transition to a New Society, International Conference, 20-22 March 2014, Montenegrin Academy of Sciences and Arts, ed. Momir Djurović, Podgorica

[10] W. E. Rees, Ecological Footprint and Appropriate Caring Capacity, Environment and Urbanization 4 (2), 121-130 (1992), M. Wackernagel, PhD thesis UBC, Vancouver (1994)

[11] Human Development Report 2014, UNDP, New York

[12] J. Rockström et al., Nature 461 (September 2009) 472, A. Wijkman and J. Rockström, Bankrupting Nature, Denying our Planetary Boundaries, New York, Routlege, 2012

[13] R. Monastersky, Nature 516 (11 December 2014) 159

[14] Bulletin of Atomic Scientists, Chicago, admin@thebulletin.org

[15] European Leadership Network, Dangerous Brinkmanship: Close military encounters between Russia and the West, Policy Briefs, 2014, Thomas Frear, L. Kulesa, Ian Kearns

[16] Human Development Report 2013, UNDP, New York

[17] R. G. Wilkinson and K. Pickett, The Spirit Level: Why Equality is Better for Everyone, Penguin Books, 2010 (second edition)

[18] Al Gore, The Future, Six Drivers of Global Change (2013), Random House, New York, p. 118

[19] B. Milanović, The Haves and Have-Nots, (2010) Basic Books, New York, and references therein

[20] J. E. Stiglitz, The Price of Inequality, How Todays' Divided Society Endangers Our Future (2012), W. W. Norton & Co, New York

[21] M. Pinkovskiy and Xavier Sala-i-Martin, Parametric Estimation of the World Distribution of Income (2009), National Bureau of Economic Research, Cambridge

[22] T. Piketty, Capital in the 21st Century, Harvard College, USA (2014)

[23] James S. Henry, The Price of Offshore Revisited: New Estimates for Missing Global Private Wealth, Income, Inequality and Lost Taxes, Tax Justice Network, 2012, p. 5

[24] Garry Jacobs and Ivo Šlaus, Global Prospects for Full Employment, Cadmus 1, Issue 2 (April 2011) 60-89, also published by The Club of Rome Discussion Paper 02/11

[25] Freedom House: Freedom in the World 2013

[26] Al Gore, The Future, Six Drivers of Global Change (2013), Random House, New York, p. 114

[27] Al Gore, The Future, Six Drivers of Global Change (2013), Random House, New York, p. 144

[28] R. J. Rummel, "20th Century Democide" www.hawaii.edu/powerkills/20TH.HTM

[29] Th. Pogge, presented on October 12, 2014 and based on WHO Global burden of disease

[30] H. Kissinger, World Order (2014), The Penguin Press, New York

[31] Yuval Noah Harari, Sapiens, A Brief History of Humankind (2012), p. 406 (Croatian translation, Fokus, Zagreb)

[32] Th. Kuhn, The Structure of Scientific Revolutions, published (1962), University of Chicago Press, Chicago

[33] Pierre Teilhard de Chardin, The Phenomenon of Man (1961), Harper & Row, New York, original 1955

[34] Ray Kurzweil, The Singularity is Near: When Humans Transcend Biology (2005), Viking Books, New York

[35] Vernor Vinge, The Coming Techno Singularity, Vision II symposium, NASA (1993)

[36] Yuval Noah Harari, Sapiens, A Brief History of Humankind (2012), p. 444 (Croatian translation, Fokus, Zagreb)

[37] Yuval Noah Harari, Sapiens, A Brief History of Humankind (2012), p. 453 (Croatian translation, Fokus, Zagreb)

[38] John Avery, Space-Age Science and Stone-Age Politics (2005), Danish Pugwash Group and Danish Peace Academy (2005), Copenhagen

[39] Inclusive Wealth Report: Measuring Progress towards Sustainability, UNEP, UNU-IHDP (2012), Cambridge University Press, The Real Wealth of Nations, The Economist (June 30, 2012)

[40] Ivo Šlaus, Human Capital, Its Self-Augmenting Growth and Individuality, Erudition 1 (16 June, 2012) World Academy of Art and Science

[41] The State of Human Development, Human development indicators, 2004, p. 127, UNDP

[42] Y. Dror, Avant-Garde Politician (2014), Westphalia Press, Washington, DC

[43] N. N. Taleb, The Black Swan (2007), Random House, New York

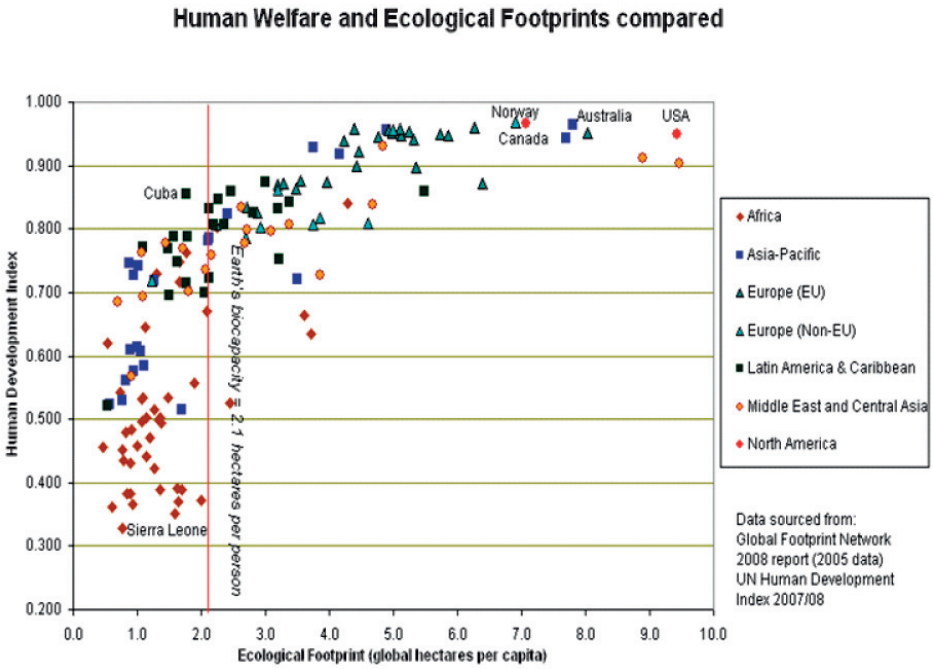

Figure 1

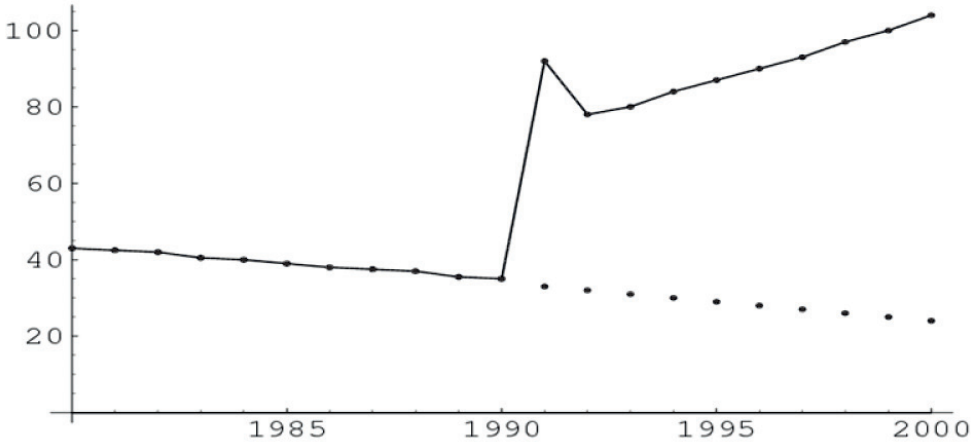

Figure 2. Deaths of children under five years of age in Iraq, measured in thousands. This graph is based on a study by UNICEF, and it shows the effect of sanctions on child mortality. From UNICEF's figures it can be seen that the sanctions imposed on Iraq caused the deaths of more than half a million children.

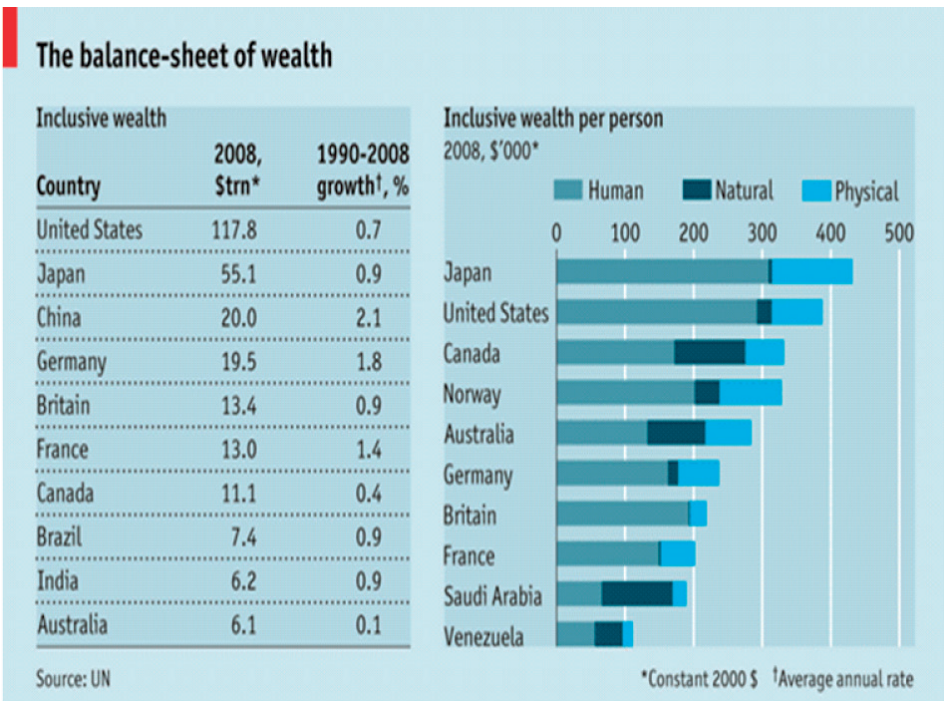

Figure 3

Sažetak

Iznesene su bitne karakteristike suvremenoga svijeta: globalnost, brze promjene, međuovisnost i neodređenost koju zasad ne razumijemo. Pokazano je da je sadašnja paradigma neodrživa te da je svijet stalno na rubu katastrofe: uništenja naše civilizacije. Naglašeno je da je nova globalna paradigma nužna te da su usmjerenost čovjeku i čovječanstvu temeljni principi nove paradigme.

Ključne riječi: globalni suvremeni svijet, nova paradigma, paradigma usmjerena čovjeku i čovječanstvu.