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### **Book Review**

### ***MegaCrunch! Ten Survival Strategies for 21<sup>st</sup> Century Challenges***

**Joseph N. Pelton and Peter Marshall**

**CreateSpace (January 27, 2010)**

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*reviewed by Tsvi Bisk*

As a futurist, I have an ideological problem with the generally pessimistic tone of this book. Dystopias are the job of prophets of doom. Preaching about what "should" be done is the job of religion. The job of futurists is to imagineer strategic "how to" *solutions!*

Other than the generally agreed upon observations about the impending crises of climate change and energy, I agreed with little in the book. And even climate change and energy could have been dealt with in a more constructive "how to solve" manner.

For example, using proven Israeli expertise, planting forests on just 12% of the world's semi-arid areas would offset the annual CO<sub>2</sub> output of one thousand 500-megawatt coal plants (a gigaton a year). A global program of foresting 60% of the world's semi-arid areas would offset five thousand 500-megawatt coal plants (five gigatons a year). Since mitigation goals for global warming include reducing our CO<sub>2</sub> emissions by 8 gigatons by 2050, this project alone would have a tremendous ameliorating effect. In addition we could put millions of the world's poorest citizens to work in forestation, thus accomplishing two positives (fighting poverty and environmental degradation) with one project.

We could also move agriculture from its current field-based paradigm (which accounts in aggregate for about 20% of the global greenhouse effect including two gigatons of CO<sub>2</sub>) to vertical urban agriculture. Not only would this eliminate the agricultural contribution to global warming, it would also enable the re-wilding of vast areas of the earth's surface, thus yielding additional climate change as well as environmental diversity benefits. Some claim that such a re-wilding could help sequester up to 50 gigatons of CO<sub>2</sub> a year, completely reversing the trend. Perhaps future dystopians will be warning about an impending man-caused ice age...

The authors cite three additional threats to human civilization: technological unemployment, super automation and overpopulation. I have deep reservations about all of these claims.

Has there ever been a real threat to employment from technology? There is an inbuilt prejudice to see jobs only in terms of production (mining, agriculture, manufacture) or office work, but the job market is much more complex.

Personal services are one example. Massage, manicure, haircut, decorating, personal trainers etc. etc. – the list is endless. In Hebrew the word for sweetheart is "Motek" so in Israel we are fond of dividing the labor market into High-Tech, Low-Tech, No-Tech and Mo-tek. I posit that the market for Mo-tek is infinite – that the human being can never be spoiled or pampered enough and that these jobs cannot be provided by technology (although no doubt they will be enhanced by technology).

Traditional services would be another example. In the developed world it has been easier to find a good brain surgeon than a reliable plumber or car mechanic. We have seen some improvement in this in recent years – often as a result of technology. Today's plumbers and car mechanics use technologies inconceivable years ago (and in the future will use technologies as yet unimagined) but we will still need the most flexible "technology" ever to appear on earth – the human being – in order to operate these technologies in situations that are always idiosyncratic. The human being is still the only system in existence that can adapt its "algorithm" in real time to constantly changing and always unique situations.

And what about those new services that are a direct or indirect consequence of our technological advancement? These include gerontological services (retirement homes and other services) as well as the educational enrichment industry (regular folks going to lectures, courses, workshops etc. around a myriad of subjects). Many times these new kinds of services overlap. The cultural activities coordinators of retirement homes employ a host of people from morning to evening: instructors in exercise, yoga, dancing, computers, flower arranging, lecturers on futurism, you name it. And how many professions, occupations and absolute number of "jobs" have been created by the Internet and social media technologies?

The paradox is that the more advanced the technology, the friendlier it becomes for the technically challenged to use. Consider how complicated it was to use a Commodore 64 compared to current computers, which have about a million times more computing power. More advanced technology does not translate into the technologically challenged being thrown out of work – indeed it might even create more job opportunities for them. Automobile mechanics with vocational high school educations operate sophisticated diagnostic equipment to repair cars that contain 8-10 computer systems. Not only are *they* not thrown out of work, but the diagnostic equipment requires a whole new class of technicians to keep it running.

And what if technology advances beyond the ability of the *present* generation to adapt? If the human brain is the infinite resource, I would suggest that human cultural adaptability is also infinite. 200 years ago the very possibility of universal literacy was dismissed by scholars. Today kids adapt to and adopt new technological and social media devices in nanoseconds. My sons do not even read the instructions. I don't even understand them when I read them!

Modern middle class people are job-creating machines consuming an ever growing range of Mo-tek: massages, pedicures, lectures, eating out, etc. etc. Tourism is the alpha Mo-tek; it employs, directly and indirectly, 10% of the global workforce.

In the United States, less than one million people officially work directly in actual farming but over 35 million are employed in various aspects of agribusiness. One might claim that by reducing the percentage

of people working in agriculture from 80% in the 19<sup>th</sup> century to less than 2% in the 21<sup>st</sup> century the industrial revolution created technological unemployment – until one looks at the jobs it created in agribusiness.

The constant refrain in the book (repeated at least a half a dozen times) is that we are headed to 12 billion people by the end of the century and must proactively reduce the human population to 3-4 billion in order to save the planet and human civilization from catastrophe. This is perhaps the most egregious misinformation in the book.

The most recent data indicates that a demographic winter will begin to engulf humanity by the middle of this century. Over 60 countries (composing over half the human race) already do not have replacement birth rates of 2.1 children per woman. This includes the entire EU, China, Russia and half a dozen Muslim countries, including Turkey, Algeria and Iran. At present trends, India, Mexico and Indonesia will join this group by 2030. Current data indicates that the human population will peak at 9 billion by the middle of the century, after which, for the first time since the Black Death, it will begin to shrink. By the end of the century the human population will be 6-7 billion. The danger is not the population explosion; the challenge is the impending population implosion.

This demographic process is not being driven by famine or disease as has been the case in all previous history. It is being driven by the greatest cultural revolution in the history of the human race – the liberation and empowerment of women. Yet one searches in vain for *any* mention of women and their place in future trends in the book.

By the end of the century, half the human race will be over 60 years of age (Japan will reach this by 2050). Within the next 10-15 years over 50% of the human race will be middle class (up from 30% today) and by mid-century perhaps 80% if not more. The middle class consume all services – especially Mo-tek at an astounding rate. Combine this growing middle class development with the reality that older societies work less hours, and we might be in for a worldwide labor shortage not a worldwide shortage of jobs.

The fact is that we would be able to sustain a global population of 12 billion by the end of century if needed. The authors themselves cite Ray Kurzweil's claim for this on page 22 of the book. For some reason the authors dismiss Kurzweil's claim as "alarming" without explaining why.

Unemployment, under-employment, growing income gaps and environmental degradation are not a consequence of technology – they are a consequence of the incompetence and dearth of imagination of the political and intellectual classes joined to the inertia of outmoded ideas.

And what about the challenge of Super Automation – what is commonly called Artificial Intelligence (AI)? The authors cite numerous dystopian visions of the mass of the human race being turned into mindless superfluous appendages to the actual running of civilization by a disconnected elite.

My reaction is that we don't even know what human intelligence is so how will we be able to recognize artificial intelligence? Can we even define the concept of intelligence? I will not relate to the scientific objections to the very concept of AI – it seems to me that Penrose in *The Emperor's New Mind* has done a fairly good job of at least challenging the smug self-assurance of scientism gone wild in the field of cognitive psychology.

Intelligence as a quantitative measurement is only a small part of mental activity and mental work. Will we really be able to construct an algorithm for imagination, wisdom, and intuition – gut feelings – all those qualitative things that in aggregate represent the totality and uniqueness of human consciousness (a concept that we also cannot define with any degree of precision). The very thought that AI can truly

represent these qualitative human traits seems to me to be nothing more than reductionism on steroids – a Cartesian view of intelligence not quite to the taste of a Pascal.

There is no question that AI (what the authors call Super Automation) will eventually replace all drudge work – anything that can be quantified. This will be an ongoing event of human liberation greater than the American and French revolutions together. It has certainly liberated me. What used to take me weeks of drudge work in libraries (checking dates and brute facts) now takes me a leisurely several hours on my computer. My productivity has increased greatly, but as yet I have not found a program that can think a simple thought or come up with a solution to non-quantifiable problems. AI will be able to correct grammar and write great sentences but will it be able to write cogent and concise memos describing nuanced solutions to complex problems?

Mental work requires thought, not brute intelligence – the arrogance of which can often inhibit an openness to new ideas which is the essence of the "I-Thou" aspect of true thought.

Can a machine really develop an "I-Thou" relationship with its environment. Can a machine dream? What has been the contribution to thought of dreaming and day dreaming? Descartes (dreaming) and Newton (daydreaming) come to mind. Will a machine have feelings or emotions? Can you really think without feelings?

But let us assume that it *is* within our capability to create an artificial entity that comprises all those traits and qualities that in aggregate comprise human mental activity. That these entities have for all intents and purposes become sentient beings on a par with or superior to human beings. This would raise profound ethical and moral questions. **WHAT RIGHT WOULD WE HAVE TO ENSLAVE THESE SENTIENT BEINGS TO DO OUR DRUDGE WORK?** What if they did not want to do our drudge work? Yes **WANT!** Can you really create a truly thinking entity without a will of its own?

One envisions hoards of AI entities humming "we shall overcome" and going on strike. If they are conscious, sentient beings they must have rights. An AI entity getting an order from a human or another AI entity might simply refuse and try to sabotage the system or even try to kill its human overlords in order to defend its dignity.

Wealth will still be produced, even without jobs, and perhaps Milton Friedman's idea of a negative income tax will become universal (the creation of a leisure civilization). Or perhaps there will be a labor shortage, as I envisage. In any case, Futurists should know better than most that every prophecy of doom from Malthus to Erlich has turned out to be nonsense; overcome by the infinite resource – the volitional, creative human mind.

In short, this is an ambitious book poorly conceived and poorly executed. It is rife with questionable facts and outdated perceptions. It screams for editing. It is wordy, repetitive, poorly organized and self-contradictory. The internal design and technical editing is slipshod and makes the physical act of reading a tiresome chore. Given the compelling cover design, this lack of attention to the presentation of content is perplexing. However, since the book is obviously a POD (Print on Demand) the authors have the opportunity to correct these technical weaknesses and perhaps in doing so, provide their content with greater clarity and precision.