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Review of 'Cybernetic Revolution and Global Aging'

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Review of 'Cybernetic Revolution and Global Aging. Humankind on the Way to Cybernetic Society, or the Next Hundred Years' by Leonid Grinin, Anton Grinin, and An-drey Korotayev. Springer, 2024. ISBN 978-3-031-56766-7.

The motto of this book by Leonid Grinin, Anton Grinin, and Andrey Korotayev should be: 'The future will be here before we know it – better plan now!' They address two of the most pervasive global trends likely to continue through the end of the century: the global aging of the human population, and the rapidly accelerating development of technological innovations, including a vast increase in the capabilities of non-human information processing, analysis and communication, better known as 'Artificial Intelligence' or AI.

How humanity responds to these two trends – biological aging and the rise of highly capable autonomous systems of production and services – will shape the future of our species. Not surprisingly, both utopian and dystopian futures have been imagined based on these trends. But until now, these have remained in the world of science fiction and entertainment. No longer: the technologies that are capable of human-like interaction have become part of everyday apps, and the leading aging societies, such as Japan, already have more people over age 65 than under 15.

We thus have little time to decide how to shape a future guided by these two global trends. How best to marry them? As populations become more elderly, can we use cybernetic and technological innovations to enhance humans, adding mental capacity and physical strength and skill, to older people to enable them to work longer and live more vigorously? Or do we use cybernetic workers to replace the elderly, shunting them aside?

What older humans will need more than anything else is human companionship and attentive support and care. If cybernetic systems can do much of

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the work now being done by humans, will that release human workers to engage in caring and compassionate work, like elder care? Or will societies seek to turn over aging citizens to automated, robotic care – perhaps cheaper, but ultimately dehumanizing to those who receive it?

Potentially more exciting, but also more frightening, are the prospects for greatly extending lifespans by medical advances and cyber-engineering of new heart, lung and other vital systems. If we can radically extend the human lifespan, people will no doubt embrace it. But what if only the rich can afford it? Will democracy survive a future where the rich live for centuries and the poor only for decades? And if lifespans are extended, will people choose to have lengthier retirements – if so, who will pay for them? Or if people remain at work, will that block opportunities for younger workers? More radically – will we need workers at all? Or will we move to a society where production and services function under automated systems, serving people who cultivate their own interests?

Let me posit two over-arching questions that will guide the use of the products of the Cybernetic Revolution and their interaction with an aging human population:

(1) Is the purpose of cybernetic innovations to make the lives of human beings more interesting, healthier, productive and enjoyable while remaining essentially human, or is it to replace humanity as we know it with something post-human, enhanced or partially or fully replaced by robotic and cybernetic/cyborg entities? and

(2) Is the purpose of cybernetic innovations to make businesses more profitable to innovators and owners, or to create such widespread prosperity that ALL people can increasingly be released from necessary income-producing work to instead take up work that is socially valuable and quality-of-life enhancing?

It is interesting to me that in most futuristic science fiction, such as Star Trek and Star Wars, the human protagonists hundreds of years in the future do not differ noticeably from present-day humans. Aliens aside, the main actors are no stronger, have no better vision or hearing, no better or differently wired brains than humans today. This is extremely odd for societies that have mastered interstellar travel, anti-matter-based propulsion and energy weapons. It seems that at some point in their development, these societies decided that it would be a grave error to change what it means to be human, and instead to preserve humanity in its current genetic form, although equipping humans with more and more advanced external computing and mechanical power. Indeed, there are often references to the explicit prohibition of genetic modification after past failed and dangerous periods of genetic enhancement, while cyborgs and robots are often presented as evil and dangerous villains. Given the opportunities described in this book, it seems that our societies will have to make that choice at

some point and likely soon: do we use technological advances to enhance the lives we lead as humans, or do we choose to leave humanity behind and become something else? (And who do we trust to make that choice?)

In a world where technological advance is carried out mainly by private corporations (though usually with government funding), providing billions of dollars in profits to a relatively small cadre of business executives and investors, we also have to ask: should the financial and material gains from advances in new technologies accrue mainly to the few, or should they be widespread? The market, as we have seen, tends to produce the former outcome. In the last few decades, in which societies acted as though new technologies need various kinds of protection from taxation, regulation and redistribution, we have seen the creation of a new class of tech titans, with fortunes in the hundreds of billions of dollars, whose collective wealth approaches that of smaller countries, and eclipses the combined wealth of a third of humanity. Is it tolerable for this concentration of wealth to continue even further? How do we ensure that our societies avoid the dystopia of a small number of wealthy investors and executives profiting from the widespread deployment of labor-reducing technologies while former workers are left with ever smaller economic resources?

Grinin *et al.* have the courage to peer a century into the future and try to determine how aging and the Cybernetic Revolution will shape that future. They expect a society that is older, but more stable, less prone to conflict, but more regulated. Will human beings adapt to this new 'cybernetic society?' Or will they insist on a degree of novelty, unpredictability, and freedom from regulation? Perhaps the price to be paid for longer and healthier lives in an aging society is adaptation to more autonomous systems and dependence on medical/nano-technology/robotics systems to manage our lives. This book makes clear both immense opportunities and challenges that lie ahead. Readers may agree or disagree with these projections, but making the effort to envisage in detail how global society may be recast by ongoing technological and biological trends is essential to gaining control over our future.

It is clear that new technologies and new conditions for humanity will likely require a new set of social contracts, perhaps entirely new constitutions to protect or enable new conceptions of humanity and human societies. To prepare, we need to understand the prospects ahead of us, especially the extent to which population aging and Cybernetic Revolutions will set new conditions, previously unknown, for human development. This book will help readers understand the prospects, and what is at stake.