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A Review of The Techno-Human Shell, by Joseph Carvalko

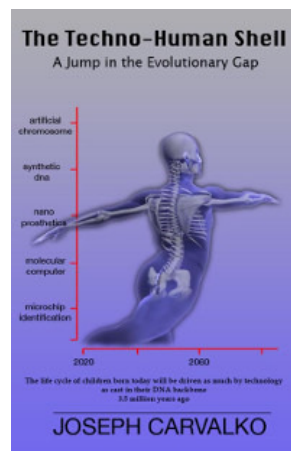
Nikki Olson
Ethical Technology

Posted: Dec 18, 2013

Joseph Carvalko, polymath, has authored a new book entitled "*The Techno-Human Shell: A Jump in the Evolutionary Gap*". Carvalko is a lawyer, an engineer, a musician, and an inventor who currently holds 10 patents in the fields of electronics, biomedicine and financial services. His new book, an exploration of Transhumanist topics, focuses on implantable device technology as well as legal and ethical aspects of the transition to post-humanity.



Nikki Olson



The goal of the book is three-fold: to explore current in-the-body technologies and those on the near horizon, to show how in-the-body technology will change human social reality, and third, to explore reasons why we ought to exercise control over certain biotechnologies of the future.

I would say the most unique strength of *The Techno-Human Shell* as compared to other books in this field lies in its detailed consideration of in-the-body augmentation devices from both an engineering and legal point of view. For instance, Carvalko goes into detail not only on the engineering of present and future technology such as artificial vision installations, synthetic DNA, drug delivery pumps, cochlear technologies, and various other implanted pumps, biosensors and chips, but also on the novel legal considerations these inventions present.

Carvalko walks the reader through introductory and historical information regarding biology and advanced technological systems, making the discussion easy to follow. For example, the Eric Drexler and Richard Smalley "sticky fingers" debate regarding molecular manufacturing is very clearly described and easy to understand. This book is certainly beginner-friendly from a technological and scientific standpoint and in bringing the reader up to date on futurist technology.

Of the legal-ethical discourse of the book, the discussion includes property rights of internal device software and data, as well as federal oversight (beyond the FDA) of in-the-body technology, and the perils of remote control access of in-the-body devices. Carvalko raises interesting political and ethical questions. For instance, he asks whether or not it's appropriate for integrated life-sustaining device software of the future to be treated like other proprietary software, given the intellectual property owner has control over whether or not an update is done (and how much it costs).

Do certain "silicon prescription" technologies substantiate a novel form of dependence such that the resultant consumer vulnerability is undesirable or even dangerous? As he discusses in an [interview with Nikola Danaylov of Singularity Weblog](#), consumers have already entered into disadvantageous relationships with corporations regarding in-the-body technology, such as, for example, wirelessly connected pacemakers, where the consumer does not own the data on their heartbeats. He says: "We face these insurmountable obstacles, and it's not apparent just how much we're giving up at this very early stage of this new technology"

Carvalko holds the position that consumers ought to have the property rights to present and future devices of this nature, and suggests that the software could be brought about as open-source (granted, with regulatory oversight). He is, however, at the same time, weary of a potential slow down in development if monetary incentive via property rights is taken away from inventors. As a summary to this discussion, he prescribes: "In the case of inventions that are life-sustaining, government should take a fresh look at what ownership means and consider reforming the intellectual property laws to serve not only the commercial interests but the interests of the patient-consumer."



In general, ethically and philosophically, Carvalko is particularly concerned with autonomy, privacy, and "loss

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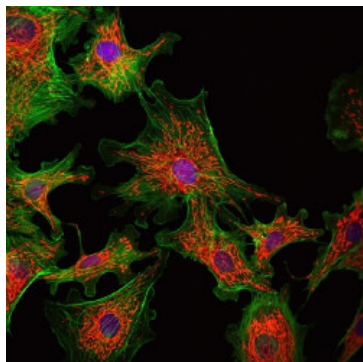
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of control” scenarios. The most central philosophical point of the book regards the evolution of machines, and the potential future of (a kind of) technological determinism. He introduces the idea of “techno-memes” or “temetics”, a concept appropriated from Susan Blackmore to describe a potential future where the deterministic evolution of technology systems overpowers memetics and the power of culture in influencing human teleology. For instance, on transitions in post-biology he writes:



“At that perilous moment, the transition from life controlled by cultural memes to life controlled by techno-memes will pass unnoticed, without as much as a whimper...In this stage, technological replication will surpass Universal Darwinism as the primary evolutionary paradigm for carrying successive generations into the future.”

As ominously as the above may reverberate, I don’t sense a distinctly optimistic nor pessimistic outlook from the book, nor is it prescriptive, however there is a familiar futurist moral imperative to the text, heralding the reader to understand the significance of what is to come, as well as the importance of certain actions in securing a more favorable future outcome.

The psychological and social elements of *The Techno-Human Shell* are often illustrated by imagined future scenarios involving humans with implants and other augmentative devices. I found the relatability of the fictional characters refreshing. Furthermore, Carvalko’s handling of medical-engineering topics suggests significant first hand experience in the field. The book’s discrete sectioning is bridged and punctuated by a diverse selection of philosophical quotes, often from historical thinkers not typically referenced by authors in this space.

Overall, *The Techno-Human Shell* is an enjoyable composition on future technology, and I look forward to more writing from Joseph Carvalko, especially as techno-legal events of the future unfold.



Nikki Olson, an Affiliate Scholar of the IEET, is a transhumanist writer/researcher authoring unique articles on transhumanist culture and advancing technology. Involved in Singularity research for 4 years as a full-time research assistant, she worked on an upcoming book about the Singularity, aided in the development of the University of Alberta course “Technology and the Future of Medicine”, and produced educational material for the Lifeboat Foundation. She attained a bachelor’s degree in 2007 at University of Alberta, Canada, in Philosophy and Sociology. Her interests lie in scarcity reducing technology, biotechnology, DIY, augmentation technologies, artificial intelligence, and transhumanist philosophy.

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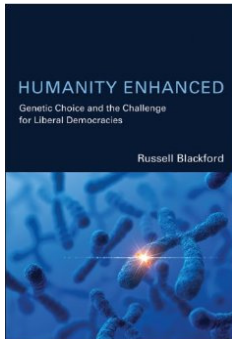
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Contact: Executive Director, Dr. James J. Hughes,
Williams 119, Trinity College, 300 Summit St., Hartford CT 06106 USA
Email: director@ieet.org phone: 860-297-2376