SERRC
Social Epistemology
Review & Reply Collective

http://social-epistemology.com
ISSN: 2471-9560

The Rise of the Robots: Post-Digital Being

Des Hewitt, Independent Scholar, deshewitt100@gmail.com

Hewitt, Des. 2022. "The Rise of the Robots: Post-Digital Being." *Social Epistemology Review and Reply Collective* 11 (5): 58-67. https://wp.me/p1Bfg0-6Pu.

SERRC
Social Epistemology
Review & Reply Collective

11 (5): 58-67. 2022.
https://wp.me/p1Bfg0-6Pu

Bioinformational Philosophy and Postdigital Knowledge Ecologies
Edited by Michael A. Peters, Petar Jandrić and Sarah Hayes
Springer, 2022
350 pp.

B*ioinformational Philosophy and Postdigital Knowledge Ecologies* is an easy book for me to review. Why do I make such an audacious statement at the start of this review? Because this book is inextricably linked to the last two books I reviewed. The last, *Knowledge Socialism,* was edited by some now familiar names.[1] The rationale for that book was to produce a collaborative work on the possibility of a global knowledge commons in a post-digital 5G world; that is, a socialised world of peer production, collegiality, collaboration and collective intelligence.

In a sense*, Bioinformational Philosophy* continues this work in an edited experimental collection that called on academics to address the relationship between our biological and genetic makeup and our academic labour (and indeed our labour and lives in society), and how in a post-digital world, a division of labour might create different knowledge ecologies, requiring different theoretical platforms. This book then aims to provide a generative structure to explore emerging configurations of bioinformation, post-digital ecologies, and theories of praxis. The book was informed by four preceding papers. It is divided into three sections: 'Bioinformational Philosophy and Theory', 'Emerging Configurations and Praxis', and 'Teaching and Learning in Post-Digital Knowledge Ecologies'. Much of the book is hopeful, positive, offering visions of an almost utopian future; but in other parts it is dystopian.

The second book review I thought about a lot as I conducted this piece, was *Religion and the Technological Future*: *Biohacking*, *Artificial Intelligence* and *Transhumanism* (Mercer and Trothen 2020).[2] This book looked at how the human condition might become enhanced or corrupted as the possibility of the digital, biological and chemical enhancement of our brains and bodies becomes a reality; and what this means for our souls, that is, our post-digital 'selves'. Thus, these two previous books now provide the perfect theoretical and conceptual framework for this review.

This makes this review another truly exciting exercise in academic labour—perhaps it is a metaphor for the experiment conducted in this book. This review does not follow the book's division of theory, emerging configurations and praxis; but instead, and perhaps in its own experiment, conducts a critical analysis of the chapters as much as is possible given their expansive nature; and in doing so, it offers a contribution in the form of a thought probe or an imaginary for action—praxis.

[1] https://social-epistemology.com/2021/10/12/towards-a-knowledge-socialism-a-digital-sedition-des-hewitt/.
[2] https://social-epistemology.com/2021/08/26/enhancing-human-existence-mercer-and-trothens-religion-and-the-technological-future-des-hewitt/.

The Pandemic, Vaccines and Genetic Engineering

This book is set firmly in the context of the Epoch of the Anthropocene and 'viral modernity'. Vaccines, particularly mRNA (Messenger Ribonucleic Acid),[3] vaccines, have been the saving grace of this anthropogenic global emergency (Honigsbaum 2019). Citing Craig Venter (7), the editors write that, 'we can digitize life and we can generate life from the digital world'. Referring to mRNA technology, and again to quote Venter, 'just as the ribosome can convert the analogue message in mRNA to a protein robot, it's becoming standard now in the world of science to convert digital code into protein viruses and cells'.

Without mRNA the DNA in our bodies cannot replicate our genetic code. Proteins are then, the building blocks of the body, indeed, of human life, and thus if we conceptualize the human body as a factory which needs services we can develop a metaphor for not only the intersection between biology and information (bioinformation) but our post-digital lives:[4] we use the services digitization offers biologically, as well as in our academic lives, as we communicate and collaborate in our collective project of knowledge production. There is then, a symmetry between the transcription, copying, (and perhaps in drawing a long bow), the editing of genes,[5] and the production of protein cell nuclei in mRNA technology and the academic collaboration that is required in writing, collaboration, peer review and publishing.

In many ways, the above bio-conceptualization of our post-digital selves represents one of the aspects of the experiment the editors of this book embarked upon—to explore the now symbiotic relationship between the bio and information. The 'services' metaphor perhaps makes the academics involved in this experiment sound like bees in a colony,[6] rather than robots. The former, a hierarchical ecology if ever there was one. Indeed, the viral 'roboticization' of our lives under the Neoliberal order is an aspect of the post-digital world we perhaps need to think about (Peters 2020)[7] and indeed this book does, so this review will naturally do so also (the words 'robot (s) appears 75 times in this publication).

A Brave New World

We are tethered, increasingly so since the pandemic (288), to the inventions and innovations in the devices of Apple, Microsoft and Google etc., so much so that we might wake one day to find ourselves biohacked and chipped. On that day we might well ask if we are becoming the robots, and if there is in fact a symbiotic relationship between digitization and the human

[3] https://biontech.de/covid-19-portal/mrna-vaccines.
[4] https://bscb.org/learning-resources/softcell-e-learning/ribosome/.
[5] See CRISPR: With the genetic sequencing and engineering through CRISPR (clustered regularly interspersed short palindromic repeats) already in use in medicine in gene therapy to prevent hereditary conditions, we have the technology to create a superhuman.
[6] https://bigislandbees.com/blogs/bee-blog/14137353-bee-hive-hierarchy-and-activities.
[7] See Peters (2020, 15-23) 'Towards a Theory of Knowledge Socialism: Cognitive Capitalism and the Fourth Knowledge Revolution' in which he also posits the view that the fusing of the physical, digital and biological worlds and science at the nano level will create a global knowledge society, through artificial intelligence, algorithms, the Deep Mind of Google and Watson. This, Peters argues, would represent the epoch of digital reason but would have the capacity for good and bad . Hence, 'roboticization', (the stultification of human life) a concept he takes from Marx's Fragment of Machine. Also, see Bennet and Joplin (308).

11 (5): 58-67. 2022.
https://wp.me/p1Bfg0-6Pu

condition at all (Hewitt 2021).[8] Indeed, I will return to this idea in the conclusion of this review.

The implications for individual identity (genetics, race, ethnicity) in this seemingly dystopian posthumanist scenario are manifold, (331-337). Indeed, what occurs to me from pondering this is that our post-digital existence transects the perspectives of posthumanism and transhumanism:[9] the language of bioinformation is full of ambiguity, and as Fuller writes in the Afterword,[10] 'bio' as a rhetorical device is devoid of meaning. Indeed, Cope *et al* (2003, 133-134) in 'Knowledge Graphs and Artificial Intelligence in Medical Education and Practice', make a similar observation regarding 'the post-digital' and 'bio-digital', arguing for example that there is no inextricable link between a person and a Fitbit on their wrist. This has, perhaps, led to the ostensible diversity in the contributions to this book, as depending on one's perspective 'bio' can have very different meanings and implications.

However, one or two themes are clear throughout a number of chapters: the melding of humans, nature and the planet in a posthumanist ecological sustainable future. Indeed, save for the references to cyborgs in this book, my understanding from reading it, is that it is very located in the perspective of posthumanism. This is not necessarily a criticism; and towards the conclusion of this review I will discuss the precarious nature of the planet, and what this means for a sustainable future on Earth.

Diversity in Post-Digital Ecologies

The editor's summary (319) pointedly defends the concept of an edited collection of work, differentiating between that and an anthology, however, the editors also acknowledge the disparate nature of the chapters in this book which given the multidisciplinary nature of contributions is not surprising, and perhaps what should be obvious by now is that ecological systems can be very different. Indeed, in the introduction to this book the editors state that, 'Today's curious bioinformational mix of blurred and messy relationships between physics and biology, old and new media, humanism and posthumanism, Knowledge capitalism and bio-informational capitalism defines the post-digital condition and creates new knowledge ecologies' (xv).

This book contains chapters from environmentalists, agriculturalists, educationalists, existentialists and those taking a postmodern turn on the pandemic. However, in continuing the theoretical framework of this review, I want to continue now by looking at how digitization affects interaction in education.

Christine Sinclair's chapters 'Competing Pedagogies for the Biodigital Imaginary: What Will Happen to Teachers?' (277-301) is a perfect place to begin an analysis of how digitization can intrude on and change the relationship between humans. This will lead on to how the

[8] https://social-epistemology.com/2021/08/26/enhancing-human-existence-mercer-and-trothens-religion-and-the-technological-future-des-hewitt/.
[9] https://www.oxfordreference.com/view/10.1093/oi/authority.20110803105325217.
[10] See Steve Fuller's (331-335) 'Afterword: Whither Bioinformatics in a Shifting Biosocial World?'

pandemic impacted on education and the political implications of this through a reading of Peter Bennett and Michael Jopling's 'The Global Pandemic Did Not Take Place' (301-319) and Megha Summer Pappachen and Derek R. Ford's 'Spreading Stupidity: Intellectual Disability and Anti-Imperialist Resistance to Bioinformational Capitalism' (237-255).

The Importance of the Social and Political Imaginary

In my last review 'Towards a Knowledge Socialism: A Digital Sedition' (Hewitt 2021), I presented a political imaginary in which a communicative action following the 5G digital revolution would provide the space—an ideal speech situation—to precipitate a democratization of knowledge.

All imaginaries are however, important for the development of ourselves and society (vi), not least for our children, as they learn about the world. Christine Sinclair tells this story of how our incredible minds have done this in the past with the aid of literature and how in the post-digital age this is changing as she focuses on educational and social imaginaries.

Using the example of a child's story from the 1960s, Sinclair (273) illustrates how science-fiction imaginaries which depict a future with robots as teachers have been with us for some considerable time. The issue of roboticization and the importance of the pandemic to the discussion was set out above earlier in this review, and is a constant theme in this book: the question is, is bio- technology and the transference to it of so much of our lives during the pandemic an enhancement to our lives, or a deterioration, a negation of the role of teachers and even human life?

Sinclair provides a useful metaphor for the cancellation of the University entrance exams in the UK during the pandemic through the 11-year-old pupil's science-fiction story: not only does her story depict a robot teacher but an assistant robot essay marker. The English government cancelled the A-level exams in 2020. These are traditionally used to assess student's grades before they are accepted into a university.

Always a source of contention and controversy, in 2021 an algorithm was introduced along with teacher's predicted grades to set a final mark. Designed as it was to set grades that were in keeping with a school's previous year's achievements, unfairness and inequality was built into this form of 'AI' (Artificial Intelligence); a remote 'surveillance' by a government championing meritocracy and 'a social levelling' agenda was introduced (309), negating Dewey's vision of a democratic education (283) and representing an 'infiltration' of the educational imaginary by the State (287).

Bennett and Joplin also discuss the 'cancellation' and erasing of the pandemic, but through postmodernist and poststructuralist discourses, for example Derrida, and notably Baudrillard's simulacra which suggests the use of a metaphor for by Bennet and Joplin;[11] simply put, the viral nature of the pandemic is pre-empted by the media in a representation that is no longer truth or fiction until we no longer recognise reality. I'll discuss this theory in more detail below shortly. Sinclair's focus is what happens to teachers in the post-digital

[11] https://journals.sagepub.com/doi/full/10.1177/0196859920977154.

11 (5): 58-67. 2022.
https://wp.me/p1Bfg0-6Pu

epoch, will it be an enhancement to them and human pedagogy in general, or a negation of it?

In a discussion of educational values, Sinclair in her chapter notably through Dewey among others, and Bennett and Joplin in their parallel discussion, ask why teaching in lieu of exams could not have just continued despite the school closures: that is, why the value of teaching the course content instead wasn't thought of, let alone recognised by the government, thereby negating the value of teaching and indeed, teachers themselves and in doing so emphasise Sinclair's argument. In this context they discuss neoliberal imperatives, which include the alignment of education with the global knowledge economy, and the defining of excellence through this seemingly one-dimensional discourse (Marcuse 1964).

Sinclair (280) discusses the 'Great Pause' which refers to intellectual and social interregnum caused by the shock of the pandemic, and a need to 're-imagine' ourselves and our futures. Sinclair states that 'the pandemic has arguably drawn attention to the mutually constitutive relationships between society, biology and technology with effects on our daily lives'. Sinclair focuses on the 'sociotechnical, technological, educational, ed-tech, neoliberal, algorithmic, ecological and biodigital imaginaries': Sinclair sees the potential for a positive future, for example, a playful, interactive robot-teacher which develops the spark of imagination in the human consciousness of the child: a robot with 'sentience',[12] perhaps capable of interacting and aiding a teacher; this is very unlike the evocation of 'hard facts'[13] the concept of 'roboticization' brings forth—thus perhaps a future to look forward to, not to dread.

In this vein, I would like to present through Pappachen and Ford, an imaginary based on a recent experience of this stage of pandemic, as related to me by a friend. As I recount this story, it will become clear that far from Sars-CoV-2 (and indeed history) being forgotten or erased by the stories and myths of government and the media as Bennet and Joplin warn is possible,[14] an autonomy or an inversion of 'bio-power'[15] (217) is possible using the very technology designed to test for the virus.

Autonomy in the Bio-Digital Age: and The 'Stupidity' of Two Little Blue Ticks

Pappachen and Ford discuss how we could, in theory, precipitate an anti-imperialist resistance to bioinformational capitalism. Developing the concept of 'Stupidity' These authors propose that through the opacity and mystery of communication, seen in for example, *Alice in Wonderland* (249) where there is no certainty, and imagination and mystery reign, that we resist the educational and social world of hard facts which Sinclair's chapter

[12] https://www.netflix.com › title Watch Humans | Netflix.
[13] https://www.goodreads.com/book/show/5344.Hard_Times.
[14] See also Joff P.N. Bradley's chapter on the 'Collective Algorithmic Unconscious' for a discussion on the 'forgetting' of history, and his citation of Stiegler for a discussion on the stultifying effects of digitization, specifically the World Wide Web.
[15] https://www.sciencedirect.com/topics/medicine-and-dentistry/biopower#:~:text='Biopower'%20is%20the%20term%20he,political%20sphere%20of%20sovereign%20power.

argues against. My small contribution to this is the following tale of an employee in a medium size company in the UK who caught Omicron sub-type B.2, the latest mutation of SARS-CoV-2 which is highly prevalent in the UK.

'Ben' as we shall know him caught Covid-19 recently. He knew this because after feeling 'under the weather' at work as he put it, his health deteriorated: at home he developed a severe headache and back pain, the symptoms of this latest mutated virus. He knew for certain he 'had Covid-19' because a lateral flow test confirmed his worst fears.[16] Under the English government's relaxed restrictions and the ideological mantra of 'Living with Covid',[17] 'Ben' didn't have to stay off work, even though testing positive, unless his symptoms dictated. Indeed, after 5 days the new regulations state that you may return to work (the English government also stopped supplying free LFT tests). Although designed to put the onus on employers to institute a policy on when their employees should return to work, a lack of action and clarity has instead put the responsibility on when to return to work after testing positive on the individual—seemingly so at least.[18]

However, 'Ben's' manager wanted him back in work and so he 'WhatsApped' him knowing he was still testing positive for Covid-19. 'Ben' received the message and his manager saw the two little blue ticks in WhatsApp so he knew for sure 'Ben' had received it. 'Ben' read it but didn't reply. Having a strong social conscience, Ben had already decided not to return to work while positive and risk transmitting the virus to other, more vulnerable members of staff. Thus his manager's request did not sit well with him: a pregnant woman and a young down-syndrome man work part-time at 'Ben's' company.[19] And why, he thought, should he return anyway, when his symptoms had not completely disappeared and his overall feeling of well-being and not improved.

'Ben' didn't return to work until the bio-technology in the lateral flow test told him he was negative for Covid-19: two strong horizontal lines on the LFT device told him he was still positive.[20] The little blue ticks in his manager's WhatsApp remained unanswered. And we know from colleagues of 'Ben' that his manager was confused, mystified by 'Ben's' unresponsive WhatsApp contact on his phone: reportedly staring at it on and off for hours, pondering 'Ben's' non-response. Perhaps his reply was lost in the ether, perhaps his silence was a deliberate snub—the manager knew not, but 'Ben' had taken on his small part of Neoliberalism and defeated it by turning bioinformation and digital technology to his advantage by being 'stupid': Pappachen and Ford (xix) state that 'Stupidity is able to resist primarily because it can't be quantified, articulated or rendered transparent'.

---

16 https://www.abingdonhealth.com/services/what-is-lateral-flow-immunoassay/#:~:text=LFDs%20use%20immunoassay%20technology%20using,then%20onto%20the%20absorbent%20pad.

17 https://www.theguardian.com/world/2022/apr/09/as-britain-learns-to-live-with-covid-it-faces-a-new-pandemic-of-disruption.

18 https://www.nhs.uk/conditions/coronavirus-covid-19/self-isolation-and-treatment/when-to-self-isolate-and-what-to-do/#:~:text=You%20should%3A,had%20a%20COVID%2D19%20vaccine.

19 See Pappachen and Ford's chapter for a discussion on how disability and identity (and the defining of these) are oppressed, and discriminated against by bioinformational capitalism.

20 https://inews.co.uk/news/health/covid-test-positive-what-look-like-lateral-flow-result-faint-line-explained-1540324.

SERRC
Social Epistemology
Review & Reply Collective
11 (5): 58-67. 2022.
https://wp.me/p1Bfg0-6Pu

So the pandemic is very much still with us, however, and ironically given the discussions cited above, this global emergency has arguably been relegated, metaphorically speaking, to the inside pages of the newspapers and the postscript on the TV news, by politics, because of a new emergency: the conflict in the Ukraine. This has immediate implications for all our lives, not least how Europe and the US sources its carbon energy supplies and moves more rapidly to renewable energy. As someone very famous once said: [21] 'events dear boy, events'. And the invasion of Ukraine by Russia is certainly an event. Thus this review continues by focusing on Peters, Jandrić and Hayes's chapter (99-113) 'Biodigital Technologies and the Bioeconomy: The Global New Green Deal?' This title could not be more steeped in irony.

A New Environment for a New Green World? The Nuclear Option

The Fukushima earthquake and tsunami persuaded Angela Merkel,[22] the then Chancellor of Germany to move away from nuclear power and concentrate on supplies of gas and oil from Russia, gas in particular. The danger of nuclear power was deemed to be too great a risk. The fact that this part of Western Europe is not generally affected by earthquakes and its nuclear power stations are not all close to the sea didn't seem to be factored into the decision making. Paradoxically, the ever-present danger inherent in balance of power politics wasn't deemed too much of a risk to the continuing supply of fossil fuels from the East. [23]

The Irony of a world, particularly Europe, desperate to find alternatives to Russian gas and oil and desperate to accelerate the development of renewable technologies is almost too much to bear: Peters, Jandrić and Hayes open their chapter by presenting the European Green Deal and discuss the agreement by which carbon neutrality would be met by 2050. The authors also discuss Joe Biden's commitment to a 'clean energy future' in contrast to Donald Trump's climate change denial.

Peters, Jandrić and Hayes's chapter is arguably the most apposite in this book. Indeed, arguably it will live in posterity as a testament to what might have been before the apocalypse came upon us. How very melodramatic, you might be thinking. However, while governments scramble to find oil and gas elsewhere, increasing fossil fuel production, nuclear weapons are being repositioned in the UK through prior agreement with the US and NATO, presumably in readiness for an attack by or on Russia.[24, 25]

Interestingly, nuclear power, which we often fail to recognised as clean energy,[26] despite its inclusion with other technologies under the rubric of Convergence 2.0, has largely been forgotten as an aspect of the energy emergency caused by the war in Ukraine. Vital supplies

[21] https://foreignpolicy.com/2010/06/04/events-dear-boy-events/.
[22] https://www.bbc.co.uk/news/world-asia-56252695.
[23] https://www.theguardian.com/commentisfree/2022/mar/21/dictatorship-russia-europe-peace-albania.
[24] https://www.theguardian.com/world/2022/apr/12/uk-military-vaults-upgraded-to-store-new-us-nuclear-weapons.
[25] https://www.nukewatch.org.uk/.
[26] https://www.cfr.org/in-brief/could-nuclear-power-cut-europes-dependence-russian-energy.

for the global nuclear industry are argued to be in jeopardy because of the conflict.[27] Given this state of affairs the idea of a sustainable ecologically based planet, or an 'Eco civilization' the authors of this chapter depict through discussions on a Bioeconomy' seems now like a vision from the previous century; indeed, one thinks of Greenpeace and their project tragically unravelling.

The Posthuman—Transhuman Divide

Coincidentally, with this theme, and the energy crisis precipitated not only by the war in the Ukraine, but by the demands of the global economy post the pandemic, the UK has seen protests by environmental groups such as 'Extinction Rebellion', 'Insulate Britain' and since the Ukrainian conflict 'Just Stop Oil'[28] (the latter perhaps presents the solution to Western leaders on what to do in light of the war). In our post-digital age protest and the possibility of rebellion in the form of 'A Great Refusal' arguably takes shape as million points of light (Hewitt and Barnett in Hewitt, 2021) connect around the world (see Steve Gennaro and Douglas Kellner's chapter 'Digital, Culture Media and the Challenges of Contemporary Cyborg Youth', 223-237): arguably, the rise of the digital being in another sense, then. What springs to mind through thinking about the perilous, precarious nature of the world and the state of the planet's ecosystems, is Steve Fuller's concept of the bifurcation of politics into 'precautionary politics' and proactionary politics'.

The former is often associated with 'green Marxism' and posthumanist environmentalists who conflate (construct) human existence with nature. That is to say, the earth, its ecosystems and nature are indivisible. Perhaps, arguably, this leads to a privileging of nature over humans. The latter is an Enlightenment Project type of risk-taking politics which believes that science, medicine and technology can make the leap forward we need as humans to continue our development, which may be on earth or may ultimately be in space as we leave a depleted (Honigsbaum 2019) and exhausted planet to seek out new worlds and life forms. This political perspective is associated with transhumanism: the word transhuman/ism appears only four times in this book and then only in bibliographies.

A Race Through Space Like a Dying Race?

So far this review has looked at the how science has helped fightback pandemic, the digitization of daily life, how it might affect education and, how, using an imaginary, which explains simply a relationship between the biological, information and digital technology how we can fight back against the forces of capitalism. However, what has not been covered to date, is how science, technology and medicine might help us transcend the human condition as this book does centre on the posthumanist perspective: that is, life here on earth.

Thus the question is should we develop biotechnology here on earth and to sustain ourselves and the planet or for a future life in space as cyborgs (Fuller 2019). Indeed, it seems to me

[27] https://theconversation.com/russias-energy-clout-doesnt-just-come-from-oil-and-gas-its-also-a-key-nuclear-supplier-179444.
[28] https://www.theguardian.com/commentisfree/2022/apr/13/just-stop-oil-climate-crisis-good-morning-britain.

SERRC
Social Epistemology
Review & Reply Collective
11 (5): 58-67. 2022.
https://wp.me/p1Bfg0-6Pu

that an expression of transhumanism can be found in 'Decolonizing Racial Bioinformatics: Governing Education in Contagion and Dehiscence' by P. Taylor Webb and Petra Mikulan (255-277). Webb and Mikulan (260) state that 'Developments in quantam physics, nanotechnology, cellular and molecular biology, neuroscience and epigenetics tell us that life has always been artificial and plastic in its transmission of code and information'. They continue by citing Clough (2008), stating that '… the bioinformatic moment has generated the 'biomediated body', a liminality that contemporary bioninformatic forces are directed toward 'the forging of a new body'. They go on to discuss how the biomediated body exposes how digitization has heralded the introduction of a 'postbiological threshold' into 'life itself'.

With the introduction of cybernetics, which is discussed in this book, a collective intelligence might one day be possible, whether this is on earth or in space the implication of the above quotes is clear: we have always been super intelligent complex machines as well as human beings with independent thought, and we are becoming ever more complex and sophisticated transhuman post-digital and postbiological selves through the enhancement of science, technology and medicine: intelligent human robots—androids no less.

Conclusion

Joff P.N. Bradley in their chapter 'On the Collective Algorithmic Unconscious' discusses the 'noosphere'. A footnote on page 59 describes the noosphere thus:

> The noosphere concept sees life on Earth as a unity constituting the biosphere and geo-sphere, the consciousness of life as a unity discontinuous but coextensive with life itself. It describes life's terrestrial evolution, which subsumes and transforms the biosphere. The human is living matter realised.

This quote, which perhaps has overtones of Marx, can be read as suggesting the evolution of human life has transformed the planet and vice-versa. However, unlike Marx's theorization we recognise the world around us because we are literally a product of it. However, given that we are living in the Anthropocene and we have by definition, impacted on the Earth's environment and delicate eco-systems it might be preferable to break out of the 'biosphere', which implies a Gaia like living planet,[29] and embark on a race through space to escape the devastation of war and environmental destruction (Fuller 2019).

In doing this, we might realise a collective intelligence whilst inhabiting our own knowledge ecologies. As it is, we continue our academic labour which this book exemplifies. It also personifies the concept of knowledge ecologies—in terms of academia yes, but also in the many fields and disciplines contained in this thoroughly engaging book. As for Peter Jandrić's view in the series editor's preface (68) that like a cobbler whose child is never shod, or a plumber who always has a leaking tap, his/her work is never complete, because of so

[29] https://www.greenpeace.org/international/story/24978/gaia-ecology-earth-is-connected-rex-weyler/#:~:text=Gaia%20was%20the%20Greek%20goddess,created%20Earth%20and%20its%20creatures.

many competing demands; this completed edited book emphatically negates this perennial worry of the academic.

References

Fuller, Steve. 2019. *Nietzschean Meditations: Untimely Thoughts at the Dawn of the Transhuman Era.* Basel: Schwabe Verlag.

Honigsbaum, Mark. 2019. *The Pandemic Century: A History of Global Contagion from the Spanish Flu to Covid-19*. London: Penguin.

Marcuse, Herbert. 1964 *One Dimensional Man.* London: Routledge.

Mercer, Calvin and Tracy J. Trothen. 2020. *Religion and the Technological Future: An Introduction to Biohacking, Artificial Intelligence and Transhumanism*. New York: Palgrave Macmillan.

Peters, Michael Adrian, Tina Besley, Petar Jandrić, Xudong Zhu. *2020. Knowledge Socialism: The Rise of Peer Production: Collegiality, Collaboration and Collective Intelligence. Springer.*