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Posthumanism and Transhumanism in *Last and First Men* by Olaf Stapledon

Abstract: The present paper focuses on Olaf Stapledon's *Last and First Men*, which was defined in Northrop Frye's terms as anatomy with allegorical status for which Stapledon is using an encyclopedic form. Applying the conceptual blending theory to *Last and First Men* results in it also being defined as an amalgamation of utopia and science fiction. As many scholars state, one of the most important contributions of SF to utopia is that the former enriched classical utopia with science and technology. In Stapledon's *Last and First Men*, utopias are achieved by means of assisted evolution (eugenics) and advanced technology, hence, the concepts of posthumanism and transhumanism play a very important role in the narrative. The present paper aims at exploring posthumanism and transhumanism in *Last and First Men* and the way they contribute to the concept of utopia in the narrative.

Keywords: Utopia; Dystopia; Science Fiction; Biotechnologies; Fourth Industrial Revolution; AI; Evolution.

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DOI: 10.24193/cechinox.2025.49.09

Stapledon's ideal, as follows from his *Last and First Men*, is utopia. According to Stapledon, the creation of utopia with the current characteristics of the human species is impossible; hence, he proposes a series of transhumanist and posthumanist transformations of the human species that may enable the creation of utopia. Stapledon is not interested in manipulating human nature *per se*; his ideal is the betterment/ improvement of society and of individuals in the society and the full realization of the cosmic potential of the human species.

Both terms, posthumanism and transhumanism, have been applied to Stapledon's works; in part, this has to do with the fact that scholars use the terms "posthuman" and "transhuman" differently, and the distinction between them really dates to the early 2000s. Hence, at present, there is no unanimity among scholars about the application of the terms posthumanism and transhumanism to the works by William Olaf Stapledon, and in particular, to his *Last and First Men* (1930).

Indeed, some scholars like Elana Gomel see the characteristic features of posthumanism in Stapledon's scientific romances[1]. For example, Gomel holds that

> posthuman ethics [as adumbrated in Darwin and Huxley, and as] narrativized in the SF of [Wells] Stapledon [Baxter and many others—] suggests that an alternative hierarchy can be created, in which regardless of their biological classification, self-conscious subjects, by virtue of their status as ethical agents possess rights that other entities do not[2].

Also, the *Encyclopedia of Science Fiction* describes Stapledon's *Last and First Men* as posthuman: "The upward spiral of Evolution depicted through the book results in a description of the later races of humanity as becoming posthuman; though in the end the transfigured species dies off"[3]. According to Andrew Pickering, "Stapledon elaborates the posthumanist (in my sense [specified by Pickering]) point brilliantly by conjuring up the changes in subjectivities and social relations that go along with the new aerial existence – flight as a technology of the self, producing a new kind of people"[4]. Other scholars describe Stapledon's works as transhumanist. For example, Andrew Pickering also describes *Last and First Men* as an "imaginary longue durée history of the future of the human race stretching over millions of years, in which humanity eventually seizes control of its own evolution, as the transhumanists would say"[5].

According to Hava Tirosh-Samuelson, the term "transhumanism" was coined by Julian Huxley in 1957, while "some of the ideas and characteristics of transhumanism can be traced to the 1920s and early 1930s in the works of J.B.S. Haldane, J.D. Bernal and Aldous Huxley"[6]. Hava Tirosh-Samuelson also emphasizes the popularity of the eugenics movement in the 1920s. It should be pointed out that Stapledon was also influenced by Haldane, Bernal, and Huxley. There are some entries in his diaries that hint at this fact. Stapledon published his *Last and First Men* in 1930, at the dawn of the transhumanist movement, so it is no wonder that this narrative was influenced by transhumanist thought.

Sherryl Vint observes that the "Fourth Men to Ninth Men are deliberately engineered by their predecessors, an idea that Stapledon drew from J. B. S. Haldane's contemporary biological treatise *Daedalus; or, Science and the Future* (1924)"[7]. Vint adds that "Haldane was a genetics researcher and Fellow of the Royal Society. In their youth, Haldane and his sister Naomi Mitchison, who also went on to be a writer, explored Mendelian genetics in mice, even publishing their results, the first demonstration of genetic linkage in mammals"[8].

In his personal diaries, Stapledon mentioned that he used to go to dinners with Mitchison, where they discussed their work and shared ideas. It should be pointed out that Mitchison's *Memoirs of a Spacewoman,* which explores multi-species evolution, can be seen as a valuable contribution to critical posthumanism. Hence, the question arises: Is *Last and First Men* by Stapledon a work of transhumanism or posthumanism or are both of these terms indispensable characteristic features of this narrative? This question is further complicated by the lack of unanimity among scholars about the definitions of transhumanism and posthumanism.

As Francesca Ferrando observes, "'posthuman' has become an umbrella term to refer to a variety of different movements and

schools of thought, including philosophical, cultural, and critical posthumanism; transhumanism"[9]. The scholar points out that transhumanism and posthumanism are "two independent, yet related philosophies, [while] posthumanism may prove a more comprehensive standpoint to reflect upon possible futures"[10].

As far as the confusion in terminology is concerned, it probably starts with *How We Became Posthuman* (1998) by Katherine Hayles, which uses the term to describe the works of science fiction that are interested in transcending the limits of the human condition by becoming human 2.0. This kind of technological fantasy of mind-uploading or augmented bodies (Greg Egan, William Gibson, Richard Morgan, etc.) would soon after start to be called transhumanism. And the term *posthuman* increasingly came to be associated with a more philosophical turn toward rethinking the metaphysics of the human, sometimes differentiating itself through new terms like Rosi Braidotti's "critical posthumanism".

Merzliakov summarizes Rosi Braidotti's view on posthumanism in the following way:

> Posthumanism deprives man of a privileged ethical, legal, and ontological status, placing him on par with other objects of the world[11]. The conceptual foundations of posthumanism are the following: scientific discoveries that brought humans and other living beings closer together, which led to blurring of the boundaries between them; development of technologies, in particular, artificial intelligence; deformation of ideas about man in postmodern philosophy. The ideological foundation of posthumanism is the rejection of ethical and biological anthropocentrism[12].

Indeed, according to Braidotti, "the posthumanist perspective rests on the assumption of the historical decline of Humanism but goes further in exploring alternatives, without sinking into the rhetoric of the crisis of Man. It works instead towards elaborating alternative ways of conceptualizing the human subject"[13]. However, this raises also the question of posthumanism, which imagines a new version of human embodiment (often in science fiction) versus posthumanism, which imagines an anchoring philosophy that comes after the philosophy of humanism has been decanted.

Now let us explore how these concepts can be applied to *Last and First Men* by Stapledon. I have already defined Stapledon's *Last and First Men* in Frye's terms as anatomy with allegorical status for which Stapledon is using an encyclopedic form[14], as well as an amalgamation of utopia and science fiction[15]. Indeed, as James reminds us, "the traditional utopia is about envisioning ways in which human society might be reorganized on earth. Its mechanisms are legislation, education or institutional changes, occasionally changes in technology or environmental management"[16]. James emphasizes that "the SF writer has not been prepared to accept such a limited view of human development"[17] and this is exactly the case of Stapledon, who enriches utopia with (assisted) evolution and advanced technology[18].

It means that to achieve the utopia of the Last Men, Stapledon is using a rich variety of science fiction instruments,

including assisted evolution, genetic engineering (called eugenics in his time), nanotechnologies, biotechnologies etc. These concepts are inseparable parts of transhumanist and posthumanist thought. However, it should be pointed out that such augmentations are more central to transhumanism, as some versions of posthumanism imagine a better future without the need for changing human embodiment.

It should be observed that, while describing a progress of the eighteen human species towards the final utopia, Stapledon employs all three megatrends of the Fourth Industrial Revolution described by Klauss Schwab: digital, physical and biotechnological[19]. While Schwab only stated the technical changes in 2016, Stapledon had been thinking about the moral, ethical and philosophical consequences of these technological changes long before, in the beginning of the 20th century.

Braidotti's idea formulated by Merzliakov that "Posthumanism deprives man of a privileged ethical, legal, and ontological status, placing him on par with other objects of the world" permeates Stapledon's *Last and First Men*. Stapledon describes the inhabitants of the other planets of the Solar system, with whom the human species sometimes form symbiosis.

Unfortunately, the Last Men discovered too late that the Sun is infected with an unknown disease and is expanding too fast, so that very soon their civilization would be annihilated. The Last Men do not have time to prevent this fatal catastrophe, but they disseminate the spores of life in the cosmos. This ending is also posthumanist in its nature, since there is absolutely no assurance that the human species will continue to exist, or give place to some other posthuman creatures. On the other hand, there is also a transhumanist dimension in this open ending of *Last and First Men*, since Stapledon imagines that all life on earth might end, the planet might be destroyed, but still somehow humanity will continue – even if a different humanity than the one we know.

Stapledon develops the posthuman idea even further in his *Star Maker* (1937), where the narrator, a bodiless spirit, wanders in the universe populated by various non-human / Posthuman creatures and cooperates with them or even forms a symbiosis with some of them. We may assume that, in *Star Maker,* Stapledon explores life beyond anthropocentrism.

On the long way of natural and assisted evolution of the eighteen human species in *Last and First Men*, we observe a strong interaction of transhumanist and posthumanist ideas. In the narration, each new human species is radically different from the other ones; hence, we can speak about posthuman creatures. On the other hand, there is still some continuity between them, they have some common features, which allows Stapledon to call them human species, changing their ordinal numbers progressively, from the First to the Eighteenth Men. We may consider that the book includes both versions of what is "next" for humanity. It has an extremely long temporal duration and includes many different versions of "men" (humanity), some of whom are closer to the transhumanist version and some closer to the posthumanist one.

As I have already mentioned, Stapledon thinks that it is not possible to create utopia using the current human species because it is not possible to eliminate human

drawbacks by law/education/ social reorganization as utopianists think[20]. Hence, Stapledon employs all three main megatrends of the Fourth industrial revolution for the transhumanist transformation of the human species. Actually, Stapledon clearly foresaw some of the advances of the technical evolution and tried to assess their possible impact on the human species.

In the biotechnological megatrend of the Fourth Industrial Revolution, Schwab speaks about designed beings, genetically engineered beings, genetic editing and sequencing that will become a trend in the future. Speaking about such designed beings, Schwab observes: "The day when cows are engineered to produce in its milk a blood-clotting element, which hemophiliacs lack, is not far off"[21]. In *Last and First Men*, such designed beings were also anticipated by Stapledon. As we remember, "the Fourth Men to the Ninth Men are deliberately engineered by their predecessors"[22], so we observe that Stapledon clearly foresaw the technological advances of the biotechnological megatrend in the Fourth Industrial Revolution.

As I observed earlier, *Last and First Men* can be interpreted as a parable of the human species, which, in its turn, consists of many parables intertwined together[23]. In this respect, we may say that the parable of the Fourth Men occupies one of the central places in the narration; it is an amalgamation of many important parables and metaphors that raise numerous ethical, philosophical and scientific issues, also with respect to transhumanism and posthumanism.

It is important to point out that Stapledon approaches very closely the idea of Artificial Intelligence in the parable of the Fourth Men. I would like to suggest that in this parable Stapledon elaborates several scientific trends into a single parable of Big Brains. One of these trends is the development of analog computing machines, and only a decade after the publication of *Last and First Men* – the digital ones. Indeed, in 1939, "German engineer Konrad Zuse created the Z2 in Berlin, which was one of the earliest examples of an electromechanical relay computer […]. In 1941, Zuse followed his earlier machine up with the Z3, the world's first working electromechanical programmable, fully automatic digital computer"[24].

One of the big events that aroused public imagination in the times of Stapledon was the demonstration of various calculating machines that would not have passed unnoticed by the writer. In 1920, a decade before *Last and First Men* was published,

> to celebrate the 100th anniversary of the invention of the arithmometer, Torres presented in Paris the Electromechanical Arithmometer, which allowed a user to input arithmetic problems through a keyboard, and computed and printed the results, […] demonstrating the feasibility of an electromechanical analytical engine[25].

Another trend elaborated in the parable of the Big Brains is the idea of a human brain living without a human body, which was already in the air while Stapledon was working on his *Last and First Men*, published in 1930. For example, Alexander Belyaev, called Russia's Jules Verne, published his *Professor Dowell's Head* in 1925, which was appreciated by H.G. Wells, who

even met Belyaev during his visit to the Soviet Union.

In his parable of the Fourth Men, Stapledon explores the idea of excessively developing only the human brain and cognitive abilities at the expense of other human qualities. This parable may metaphorically symbolize the emerging studies on Artificial Intelligence in the times of Stapledon and anticipate current advancements in AI and biocomputers. Also, this parable may be viewed as a possible response to the vision of utopianism that privileges cognition over other aspects of being human. Stapledon's idea is that such an approach does not necessarily lead to the creation of utopia, since it can also create dystopia.

We may assume that

> The parable is created by Stapledon to demonstrate his conviction that intellect is not the only necessary and sufficient aspect of the human species; other aspects are also very important and must be worked on to create a harmonious human being. By means of the rule of contraries Stapledon clearly shows that 'evidently something more than a mere bulk of brains was needed for the solving of the deeper intellectual problems'[26].

This idea may be viewed as Stapledon's contribution to the discourse on AI, and precisely whether AI can ever completely substitute a human brain. If we consider Artificial Intelligence a "mere bulk of brains" (though at the moment AI has not even reached this stage, as it cannot substitute a human brain completely), then, according to Stapledon, "something more […] was needed for the solving of the deeper intellectual problems". By "something more" we may imply not only augmented cognition but all the other aspects of being human, which are no less important, as Stapledon holds.

Actually, according to Stapledon, this is an example of a dead-end branch of evolution, in this case, of assisted evolution. Thus, Stapledon convincingly demonstrates that not every posthuman successor of the human species may be successful, even if very good intentions were applied during its creation. So, it is very important to think about the consequences of biotechnological experiments. In this case, SF is a very good tool to study all the possible consequences in all their complexity. Indeed,

> Any significant science fiction can be viewed as a kind of a scientific research laboratory in which the important trends in the development of the society are studied, analyzed and extrapolated to the imaginary world for further analysis. This imaginary world is a metaphor, a model which tests the viability of concepts and ideas of a science fiction writer[27].

Stapledon emphasizes that "The Great Brains were also too far away from the ideal of the personality-in-community"[28]. The ideal of a balanced relation between individual and community is very important for the writer, who even coined the term "individual-in-community"[29].

Indeed, the Big Brains do not possess human emotions, "they were too individualistic, egoistic and indifferent, they knew no love, no affection, no compassion, and no respect. They cared no more for men and

women than for material in a test-tube"[30]. Also, they cared for each other only as for "an instrument of knowing"[31]. This description of the Big Brains may metaphorically correspond to the concept of Artificial Intelligence or biocomputers. Thus, we may suggest that Stapledon anticipated these ideas by some decades.

Also, in the parable of the Forth Men we can foresee the contemplation on a once popular argument of the advocates of computers and Artificial Intelligence. The advocates were saying that AI and computers are much more reliable and make better decisions because they do not have any feelings and emotions. Using the parable of Big Brains, Stapledon clearly demonstrates that the absence of feelings and emotions does not necessarily lead to better decisions or a better world in general. Actually, this idea was demonstrated later by other science fiction writes as well; we may think about the dystopian community in *The Giver,* where people did not have any feelings[32].

Also, this parable can be viewed as a contemplation on another aspect of the biotechnological megatrend of the Fourth Industrial Revolution, namely, a merge of a human body with Artificial Intelligence, nanotechnologies, prosthetic devices etc. The Fourth Men had the Martian virus implanted that allowed them telepathic communication and their "bodies" actually resembled factories that ensured the functioning of the huge brain. Unfortunately, these posthuman transformations did not improve the life of the society in the long run; on the contrary, they led to the fatal war and the total destruction of the artificially created species. Hence, this parable may be viewed as a warning for the advocates of augmenting a human body at any price, because the consequences of such scientific technological experiments for created cyborgs and society can be very devastating, if not fatal.

Another phenomenon that stands at the core of many transhumanist and posthumanist transformations in *Last and First Men* is telepathy. In *Last and First Men*, Stapledon uses telepathy as a way to drastically improve the communication of the human species because in his time, telepathy was considered to be a scientific idea, as, for example, the concept of ether once used to be. As we know, in the personal diaries of the writer kept in the Stapledon Archives at the Sydney Jones Library at the University of Liverpool, we can read that he was attending meetings of the circle studying telepathy[33]. Indeed,

> Stapledon demonstrates a profound interest in telepathy, he attended meetings and lectures and makes speeches himself on this subject. Many entries in his personal diary testify his interest in telepathy as an alternative means of communication. In his non-fictional works, Stapledon refers to telepathy as symbolism and hopes that some day the communication between men may become as perfect as the communication between cells of a body; that may enhance the better fulfilment of individual personalities and of community on the whole[34].

Stapledon expresses his transhumanist ideas also in his non-fictional writings, as one of his dreams is dedicated to the drastic improvement of communication between humans in the future: "the hope

is permitted that in some distant age the communication of Man with man may also become so perfect that, like the cells, men may 'imagine' themselves together into one soul. And this is indeed our ideal that our minds may become thought-streams in a greater mind"[35].

It is worthwhile to emphasize that this idea is metaphorically realized in the final utopia of the Last Men. Long before Schwab heralded the Fourth Industrial Revolution[36], Stapledon employed all its three megatrends to greatly improve the human brain, body and human communication, which, according to the writer, may lead to the creation of utopia. Actually, the writer was essentially correct in the kinds of changes needed for a significant shift in human cultures.

In *Last and First Men*, it took about two billion years and eighteen human species to arrive at these results. Stapledon suggested a history of the future, showing several of the many possible ways to improve society and the human species. And even if some of Stapledon's ideas, like telepathy or time travel, may seem too science-fictional, it is worthwhile to point out that even contemporary science already demonstrates some advances in telepathy, at least, in computer assisted telepathy[37]. As I mentioned, "at present, there are several techniques that help visualise and study brain activity, neural responses, waves produced etc. (real-time fMRI, PET scans etc.)"[38]. Hence, at the moment, human brain activity can be registered only by special equipment but not by another human brain.

However, it is already possible to speak about "'computer assisted telepathy', which is used for communication with patients paralyzed due to various reasons and unable to master any other means of communication"[39]. Also, "neuromodulation might be able to increase functionality of the human brain by means of implantation of neuro-interface prosthetic devices into the brain tissue"[40]. More examples of the brain-computer interface can be seen in the works of Elon Musk and in his Neuralink experiments[41]. Actually, "these can be first steps towards increased sensitivity of human brain, required by telepathy and achieved due to the research in biology and physical sciences, as Stapledon predicted almost a hundred years ago"[42]. Indeed, "we are only at the beginning of this journey but some professionals are already rather optimistic. [They] described telepathy as the future of communication"[43]. However, it is important to point out that only a correct use of these technologies can bring benefits for society. They can be used in the way Stapledon intended, that is, to create a better society, or they may simply allow corporations to have better control and to make more profit using personal data, as the terms "surveillance capitalism"[44], "emotional capitalism"[45], "digital panopticon" and so on suggest.

Stapledon was also inspired by the idea of a collective mind; this theory was rather popular between the 1920s and the 1950s[46]. However, even if the material realization of Stapledon's idea of greatly enhanced human communication looks like hard science fiction today, almost the same level of communication could be realized very soon by using digital technologies (see Zuckenberg's claims about telepathy)[47] and computer-assisted telepathy via implanted prosthetic devices (see, for example, Neuralink experiments)[48]. What is

most important here is Stapledon's metaphor of a drastically improved communication of the human species necessary for the creation of utopia and not the way it will be physically implemented. Also, this enhancement of the human communication can be seen as both a transhumanist and a posthumanist transformation. Similarly, the ability to travel in time by the future human species can be considered both transhumanist and posthumanist. On the one hand, this transformation is achieved by special techniques and implants; hence, it can be considered posthuman. On the other hand, travelling in time and seeing all the suffering of the previous human species and of other beings greatly enhanced empathy in humans and this improvement can be seen as a transhumanist one.

It should be observed that, in *Last and First Men,* Stapledon does not employ any type of time travel machines for time travel[49]. Stapledon suggests a sophisticated technique which relies on telepathy for this activity. A specially selected and trained individual gets into telepathic contact with a brain living in the past and perceives the world through the eyes of that individual. It seems that Stapledon is the first one to suggest this mechanism of time travel.

I would like to make an important observation on the feasibility of the race mind based on telepathic communication as imagined by Stapledon for the utopia of the Last Men. Actually, Stapledon proposes implantation of the inactivated extraterrestrial virus into the human brain. This virus is capable of telepathic communication in the cloudlet and it maintains these qualities after the implantation into the human brain. Here we observe that Stapledon employs one of the vaccine principles, namely, the introduction of an inactivated virus into the human body. Stapledon is also anticipating contemporary nanotechnological techniques, since virus particles are compatible with the size of nanoparticles. He also anticipates the implantation of neuroprosthetic devices into brain tissues to create various interfaces, namely, brain-computer interface (E. Musk) and brain-to-brain interface that actually lies at the basis of Stapledon's idea of a race-mind[50].

It is important to point out that numerous technological advances on the way to the final utopia in *Last and First Men* have not changed the human essence drastically, so that Stapledon can still call all of them the human species. For example, the 16th human species invented time travel and it helped them to better understand the other species, as well as enhanced their empathy; these are essentially human qualities. This is very different from the situation described in other works of science fiction dealing with transhumanism. For example, in *The Giver*, the technology is used seemingly for the benefit of society with an utopian desire, but it completely changed the nature of men, turning them into machines. In this utopia turned into dystopia, pills suppressed pain, hormones, and emotions. Members of the community knew neither love, nor anger, they had no families and had no family feelings. They even had no memories or colors in their lives. So, in the "utopia" of *The Giver*, the technology took away the essential human nature from humans. This does not happen in the final utopia of the Last Men.

One should not understand *Last and First Men* too narrowly as a prediction of future technologies, even if Stapledon could correctly foresee some of them; he

was more interested in what might be the philosophical as well as physical future of mankind. Today, in the age of advanced biotechnologies, cloning, genetic engineering, AI, terraforming, digitalization, new materials, etc., it is especially important to think about the ethical, moral, scientific and philosophical implications of these technologies and it is exactly what *Last and First Men* encourages us to do: to assess and evaluate possible technological advances and their societal impact, as well as posthuman and transhuman transformations over a long period of time.

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10. *Ibidem*.
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35. *Ibidem*. Here we find a brief review of Stapledon's unpublished manuscript, p. 15.
36. Klauss Schwab, *op. cit.*

37. Iren Boyarkina, "Passages through the Spacetime Continuum: Telepathy, Time Travel, and Symbiosis in Stapledon's Star Maker and Last and First Men" in Iren Boyarkina (ed.), *Passages Through Enclosures and the Spacetime Continuum in English and American Science Fiction*, Cambridge, Cambridge Scholars Publishers, 2022.
38. *Ibidem,* p. 131.
39. *Ibidem*.
40. Hochberg et al, 2006, p. 164-171, cited in Boyarkina, *op. cit*., 2022, p. 131.
41. Elon Musk, "An Integrated Brain-Machine Interface Platform with Thousands of Channels", in *National Library of Medicine,* 2022, www.pmc.ncbi.nln.nih.gov/articles/PMC6914248/
42. Iren Boyarkina, *op. cit.*, 2022, p. 131.
43. *Ibidem.*
44. Surveillance capitalism is defined by Shoshana Zuboff as "a new economic order that claims human experience as free raw material for hidden commercial practices of extraction, prediction, and sales".
45. The dual process by which emotional and economic relationships come to define and shape each other is called emotional capitalism. This term is introduced by Eva Illouz.
46. A hive mind is the organizing principle of the community in the case of those insect species for which the basic reproductive unit is the hive, organized around a single fertile female, the queen. The term is used more loosely in some sf stories, often referring to any situation in which minds are linked in such a way that the whole becomes dominant over the parts, as defined by the Science Fiction Encyclopedia.
47. Iren Boyarkina, *op. cit*., 2022.
48. *Ibidem.*
49. For the types of theoretically possible time machines see Iren Boyarkina, *op. cit*., 2022.
50. A brain–brain interface is a direct communication pathway between the brain of one animal and the brain of another animal.