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Life extension – a conservative enterprise? Some fin-de-siècle and early twentieth-century precursors of transhumanism

Ilia Stambler

Department of Science, Technology and Society, Bar-Ilan University, Israel

ilia.stambler@gmail.com

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Abstract

The beginning of the modern period in the pursuit of radical human enhancement and longevity can be traced to *fin-de-siècle*/early twentieth-century scientific and technological optimism and therapeutic activism. The works of several authors of the period – Fedorov, Stephens, Bogdanov, Nietzsche and Finot – reveal conflicting ideological and social pathways toward the goals of human enhancement and life extension. Each author represents a particular existing social order, and his vision of human advancement may be seen as a continuation and extension of that order. Therefore, the pursuit of life extension may be considered a fundamentally conservative (or conservationist) enterprise.

Introduction: *fin-de-siècle* origins of transhumanism

Transhumanism is presently forming into a sizable intellectual and social movement, advocating the ethical use of technology to extend human capabilities. Like any intellectual movement, it seeks to establish its historical tradition (Bostrom 2005). Within what might be termed the transhumanist "tradition of overcoming tradition," the pursuit of radical life extension plays a central part. Longevity is a primary goal of human enhancement, and its pursuit has been the longest and best sanctified by authorities of old (Gruman 1966).

However, the beginning of the modern period in the pursuit of radical human enhancement and longevity can be traced to the scientific and technological optimism and therapeutic activism, rising at the end of the nineteenth/beginning of the twentieth century, and it is in that *fin-de-siècle* period that the roots of transhumanism might be sought.

The *fin de siècle* was a time of peace, yet with widely felt apprehensions of stagnation, of a crisis, even of an imminent extinction of humanity (Jay and Neve, 1999). At the same time, contemporary scholars delighted in the period's astonishing scientific, technological and industrial achievements: the advances in transportation, energy supply, manufacturing, agriculture and general medical care (Porter 1997, Albury 2001). It appeared to them evident that science, perhaps for the first time in history, had the genuine ability to ameliorate social plights, to cure diseases and extend human life. Contemporary advocates of life extension extrapolated on the technological advances and were motivated by them. Several *fin-de-siècle* authors were convinced of the perfectibility of the human species and might be considered as possible forerunners of modern transhumanism: the Russian religious philosopher Nikolay Fedorov (1829-1903); the American physician and writer Charles Asbury Stephens (1844-1931); the Russian Marxist politician Alexander Bogdanov (1873-1928); the German philosopher Friedrich Nietzsche (1844-1900); and the French social scientist Jean Finot (1856-1922). Yet the ideological underpinnings of their teachings diverged dramatically. The social conditions they saw as necessary for the pursuit of longevity were often radically opposed, each vision stemming from its author's particular social milieu. The following historical-ideological exposition of their works will reveal often diametrically opposed ideological and social pathways to the destination of human enhancement and longevity.

Nikolay Fedorov – the transhumanist as parochial priest

Nikolay Fedorovich Fedorov, the Russian Pravoslav religious philosopher and founder of "Russian Cosmism" has often been cited as a precursor of transhumanism (Artuchov 2008). The philosophy of this modest Moscow teacher and librarian was admired and recognized as an influence by such Russian thinkers as Lev Tolstoy, Fyodor Dostoevsky, Vladimir Soloviev, Konstantin Ziolkovsky, Vladimir Vernadsky, Alexander Chizhevsky and Nikolay Berdiaev (Berdiaev 1915). According to Fedorov's *Philosophy of the Common Task* (most of his works appeared posthumously in 1906 and 1913 under this title), the Christian doctrine of salvation dictated a practical program toward individual and social immortality, achievable by collective, scientific effort (Fedorov 1995).

According to Fedorov, human beings must endeavor to create a perfect, coherent society that can be maintained indefinitely by mutual aid. Such a society will outgrow the "infantile" concept of a "superman," and there will be in it no "egoism or altruism," no "mastery or slavery," only the "relatedness" and brotherly love of all humankind (Fedorov 1995, 2, 132-141). The Russian notions of "sobornost" and "mir," denoting an inspired uniform effort of equals, are exalted in Fedorov's thought. In such a society, individual death, "the last enemy to be overcome," will be vanquished by regulating and purifying the internal body environment (to prevent what might be called intrinsic death) and by controlling the external environment (to prevent extrinsic accident). For Fedorov, the latter goal involved the colonization of the entire earth surface and space exploration, and provided a source of inspiration for Fedorov's pupil, the rocket pioneer Konstantin Ziolkovsky. According to Fedorov, physical immortality will be attained by all, with no exceptions. Moreover, achieving immortality only for future generations, while all the past ones remain disintegrated, seemed to Fedorov incompatible with universal justice, Christian compassion

and filial piety. Therefore, humanity needed to work toward the resurrection of all who have ever lived.

Even though the general goals of extreme longevity – even immortality or resurrection – might be acceptable to many modern transhumanists, I doubt that many democratically inclined proponents of the movement would agree with the political regime that Fedorov deemed necessary. In Fedorov's work, nationalist and totalitarian undertones are unmistakable:

> Russia and the Russian people can (and must) call all peoples of the world to an alliance against this common enemy [death]. Absolute monarchy will play the highest role in this struggle, and Pravoslav Christianity, that will sanctify this union, will become the common religion. (Fedorov 1995, 3, 74.)

And furthermore, the "common task" of fighting death requires universal conscription, and must be directed by a "psychocracy" grounded in absolute monarchy:

> Regulation is not restricted to the physiological aspect of the conscripted, but expands onto the internal, psychic aspect, and the latter becomes the foundation of society (Psychocracy). Psychocracy cannot coexist with judicial forms of government, with aristocratic or democratic republics, not even with constitutional monarchies, but only with absolute, patriarchal monarchy, with a King, standing in place of the Fathers, as a sovereign of the two kinds of regulation, the internal and the external. (Fedorov 1995, 3, 136.)

Notably, absolute monarchy was presented by Fedorov as a symbol of power for the unification of equals, rather than as the rule of high aristocracy. Nonetheless, Fedorov does build on and advocates the conservation of his native social and ideological institutions: Pravoslav Christianity, universal conscription and absolute monarchy. Not only are the present social institutions to remain in the future, but they are to remain indefinitely.

Charles Stephens – the transhumanist as elite scientist

The way to human enhancement and longevity envisioned by the American man of letters and biomedical researcher Charles Asbury Stephens, was more attuned to American industrialism. In 1888, funded by an enterprizing philanthropist, he established in Norway, Maine, a laboratory, exclusively dedicated to promoting "researches into the causes of old age and death" – apparently among the first in the United States – which he hoped to transform into a large-scale institute and a center of international cooperation for aging research. (The institute funding ceased when the philanthropist passed away, Gruman 1956.) In *Natural Salvation: Immortal Life On the Earth from the Growth of Knowledge* (1910; first published in 1903), Stephens posited the "The Promethean Faith," the creed in which salvation through faith and supernatural intervention was substituted by salvation through biomedical science. The term "salvation" was understood literally as an eternal rescue from death. According to Stephens, religion based on supernaturalism is a dead and deadening concept, for it displaces human hopes to the afterworld and curbs the effort to prolong this worldly life. In contrast, the "Promethean faith" is the religion of life preservation, as ancient as "the instinct effort of the protozoon to save itself." Compared with this natural effort at salvation, "the World's five great Creeds are as novelties of yesterday" (Stephens 1910, 66).

To Stephens, as to Fedorov, individual physical immortality, even resurrection, appeared to be distinct possibilities. Stephens argued that ultimate destruction is not an inexorable law of biology, not even of physics: the "cell-of-life" is potentially deathless, and material "elements" are virtually unchangeable. As in Fedorov, the possibilities of indefinite maintenance of human personality and resurrection are derived from the concepts of Lamarckian inheritance and the "Ether of Space." Past personalities are said to be inherited (remembered) in the progeny, as they lie "dormant in the brain of their descendants," and can be reawakened. Furthermore, human thoughts and memories form an imperishable physical trace, an "echo" or "mirror-picture" that are "present in the ether everywhere" and can be recaptured in some distant future (99-105). The concepts of life extension, physical immortality, symbolic immortality and resurrection are thus synthesized:

> [We] may possibly know a species of resurrection, if our descendants shall desire to call us up… More than this we cannot yet hope. …Enough, till the grander day comes when our children, transfigured and perfected in their organisms by the growth of knowledge, shall cease to die. But even in that grander day we shall be with them. … And if we have worked for that grand day, they will love us. *Morituri*. But that thought is our compensation, our solace in death. (106.)

Thus, Stephens arrived at precisely the same conclusions as Fedorov regarding the possibility and necessity of physical immortality, on precisely opposite ideological grounds: the rejection of established religions. Stephens' social vision, too, was radically different from Fedorov's. In contrast to Fedorov's conceptions of universal relatedness and equality, more than a slight tint of elitism and racism is present in Stephens' work, as he affirmed that "the burden of progress and achievement will long rest with the dominant race." And furthermore, "certain of the lower races, like the lower animals, will of necessity be coerced for the general good and for their own good" (117).

Unlike Fedorov's universal conscription to the "Common Task" (of the kind that existed in Czarist Russia), Stephens valorized global "commerce," flourishing under the American leadership, as the foundation for progress and cooperation, whereby "the fruits and goods from every quarter of the planet are brought to our doors; … the land [is] overspread with wires, which put us in thought-touch with our fellows, thousands of miles away" (Stephens 1910, 47). Notably, not only does Stephens emphasize that life-extensionism is as traditional as human existence, but also expresses the conservative sentiment that the present pattern of American capitalist economy will be strengthened and perpetuated.

Alexander Bogdanov – the transhumanist as communist functionary

The valorization of capitalist commerce was loathsome to the Russian revolutionary Alexander Bogdanov. Bogdanov was a veteran Marxist. He was initially a member of Narodnaya Volia (The People's Will movement). In 1896, he joined the Russian Social Democratic Party, and became a staunch supporter of its Bolshevik faction. From 1905 to 1907, he was a member of the party Central Committee and actively participated in the Russian revolution of 1905. In 1907, he joined Lenin and Dubrovinsky as a co-editor of the Bolshevik central periodical *Proletary* (The Proletarian). More than once, he directly confronted Lenin, who in *Materialism and Empiriocriticism* (1909) condemned Bogdanov's *Empiriomonism* (1904-1906), lamenting how the "dead idealistic philosophy snatches the living Marxist Bogdanov" (Lenin 1967, 18, 346). In 1918, Bogdanov became a professor of political economy at Moscow University, a member of the presidium of the Communist Academy, and a member of the Central Committee of the Proletcult (the Proletarian Culture

movement). In 1926, he founded and led the State Institute for Blood Transfusion in Moscow, with the explicit purpose of achieving rejuvenation. Nowadays, the life-saving abilities of blood transfusion can hardly be doubted. But in the 1920s, this was still an experimental and rather unsafe intervention. Bogdanov, who conducted most dangerous experiments on himself, died in one of them in 1928, apparently due to an infection of the donor blood or imperfect knowledge of blood type compatibility.

Bogdanov's crowning scholarly achievement was *Tectologia – Vseobshaya Organizazionnaya Nauka* ("Tectology – the universal science of organization," 1913-1922). In *Tectologia*, Bogdanov posited general principles of system organization, whether mechanical, social or biological, expounding on the concepts of structural similarity, negative and positive feedback, progressive selection, weakest/minimal components, production/consumption balance, self organization and dynamic equilibrium. According to Bogdanov, the purpose of the science of tectology was to suggest practical methods of optimal planning needed to maintain a dynamic equilibrium and system viability on every level – biological, personal or industrial. According to Bogdanov, socialist economy needed to be based on optimal planning and on the "Scientific Organization of Labor - SOL" (he was a founder of the SOL movement in Soviet Russia). The new proletarian culture was, according to him, required to create "a new human type, organizationally complete, free of the earlier narrow-mindedness that was born of the fragmentation of the human being in specialization, free of the individual seclusion of the will and feeling that was born of the economic disparity and struggle" (Bogdanov 1920). Slightly modifying Marx and Engels's dictum that "the free development of each is the condition for the free development of all" – Bogdanov believed that the sustained viability of each must become the condition for the sustained viability of all, and vice versa. Bogdanov advocated blood transfusion as a principal means for enhancing individual viability and longevity. And what a strong Marxist rationale did he have for this technique!

In *The Struggle for Viability* (1927), Bogdanov proposes the general view that vitality deteriorates due to an impairment of cells' "organizational relations" and "internal milieu." According to him, social imperfections and inequalities largely contribute to bodily dissonance and life-shortening. The "organizational relations," both social and biological, are adjustable, their equilibrium can be enforced, whereby "our life should last 120-140 years" at the least. In the paper "Physiological Collectivism" (1922), Bogdanov provides further "collectivist" grounds for the blood transfusion technique (applicable to the organization of the society as well):

> The conjugation of blood, as well as the conjugation of cells has this property that, even without the exact determination of the weakest components, it typically supports them…. And if there is only a little deficit, as usually happens in prolonged processes of deterioration, then even the smallest support can have a radical significance, allowing the organism to fully utilize its own resources for its own restoration, which was previously hindered by chain functional disarray.

By supporting the "weakest" elements, by sharing resources with them, a prolonged existence of the entire system can be accomplished. Such a support of the "weakest components" can be "only systematically achieved by transcending the limits of physiological individuality, as foreign as this thought may seem to the individualist worldview of our epoch." In summary, the enhancement of human vitality and life-prolongation can be reached only in a society ripe for it, that is, in a society collectivist enough to share its resources, its blood, with the weakest

elements. According to Bogdanov, such collectivism "is now only seldom present. But it is present, nonetheless, and it is augmenting with the progress of culture" (Bogdanov 1922). Thus, the purported ideological foundations of the emerging Socialist state – central planning, collectivism and support of the weakest members of the social organism – were heralded by Bogdanov as the first buds of a new life-affirming social order that he hoped would continue far into the future.

Friedrich Nietzsche – the transhumanist as aristocrat

An opposed, individualistic, even "aristocratic" way to life enhancement is suggested in the works of Friedrich Nietzsche. The possible relation of Nietzsche to transhumanism has been recently discussed (Bostrom 2005, Sorgner 2009). Yet, after WWII, an association with the *Übermensch* became suspicious, and the anti-democratic tendencies of Nietzschean philosophy are well recognized. In Nietzsche's writings, denigration of the "low," the "weak" and the "mediocre" is ubiquitous. Fedorov was among the first to point out the inherently elitist nature of Superhumanity as advocated by Nietzsche, and he considered Nietzsche a true representative of European "petty aristocracy," a mouthpiece of militarized Germany, a "philosopher of the Dark Kingdom" (Fedorov 1995, 2, 118-141). Fedorov thus summarized his critique of the Nietzschean conception of Superhumanity:

> Superhumanity can either be the greatest of vices, or the greatest of virtues. It is undoubtedly a vice of satanic origin when it consists in the elevation of one or several persons above their equals, that is, above their fathers and brothers. It becomes the greatest vice when it appropriates immortality as a privilege, when it exalts itself above all, above the deceased and those yet living. Superhumanity in this sense (as a privilege to immortality) is a vice not only moral, but intellectual. … But Superhumanity is also the highest virtue, when it consists in the fulfillment of the natural duty of sentient beings to unite, to transform the blind, irrational force of nature that spontaneously creates and destroys, into a force governed by reason. (1995, 2, 135.)

I would further argue that Nietzschean philosophy is hardly compatible with the general task of life extension that is so pervasive in transhumanism. According to Nietzsche, prolonged self-preservation is the lot of mediocrity, vainly attempting to perpetuate the current perceptions of personhood and current social patterns. "Nothing will endure until the day after to-morrow [sic]," he wrote in *Beyond Good and Evil*, "except one species of man, the incurably mediocre" (Nietzsche 1964, 12, 237). The Superman, in contrast, will indomitably march onto his tragic end. Nietzsche does often speak of life affirmation and life enhancement and, in *The Will to Power*, refers to death as a "foolish physiological fact," opposing the dominant Christian assumption that "one should live in such a way that *one may have the will to die* at the right time!" (Nietzsche's emphasis, 1964, 15, 338). For a brief period (around 1876) he was a follower of Cornaro's hygienic regimen (Hall 1922, 22). But nowhere in his writings does Nietzsche seem to overtly set longevity as a goal for the Superhuman. On the contrary, in *Thus Spake Zarathustra*, he treats the pursuit of longevity with utter contempt: "What matter about long life! What warrior wisheth to be spared!" He makes his contempt even more explicit when he claims: "I love those who do not wish to preserve themselves, the down-going ones do I love with mine entire love: for they go beyond" (Nietzsche 1964, 11, 53, 244). For Nietzsche, strength is by no means equivalent to longevity:

> The strong are, after all, weaker, less wilful, and more absurd than the average weak ones. They are *squandering* races. *"Permanence"* in itself, can have no value: that which ought to be preferred thereto would be a shorter life for the species, but a life *richer* in creations. (Nietzsche 1964, 15, 304.)

The ecstatic momentous enhancement of life is to be preferred over a long (and presumably conservative and boring) self-preservation. Recently Sorgner argued that the Nietzschean concept of "the overcoming of the human species" is "supposed to give meaning to human beings" and that "the transhumanist concept of the posthuman cannot be fully appreciated, if one does not take the meaning-giving aspect into consideration" (Sorgner 2009, 40). It appears, however, that Nietzsche's aristocratism and contempt for life-prolongation, in addition to his denial of positive scientific knowledge and disregard of technology, are elements that make it difficult to accept him as an ideological forerunner of transhumanism, at least for those transhumanists who desire a rapid development of life extension methods and care for their universal distribution. Yet, as regards "life enhancement" in a broader sense, Nietzsche's work may be viewed as a product and advertisement of German aristocratism.

Jean Finot – the transhumanist as social activist

Opposition to elitism and explicit advocacy of life-prolongation were the foundations for the philosophy of Jean Finot, a prominent *fin-de-siècle* French journalist, social scholar, futurist, and activist of the anti-racial movement. France was a fertile, perhaps even a primary, ground for the European life extension movement, since the Enlightenment and even earlier – a fact that is seldom emphasized. The progressive philosophy of Nicolas Condorcet (1743-1794) and the positivist philosophy of Auguste Comte (1798-1857) professed the amelioration of the human condition and advocated progress, including the goal of life-prolongation. Working in the Parisian hospices for the elderly – the Salpêtrière for women and the Bicêtre for men – French physicians, Charles-Louis Durand-Fardel (1815-1899) and Jean-Martin Charcot (1825-1893), established in the mid-nineteenth century the field of geriatric medicine (*Médecine de Vieillards*) (Stearns 1976). The works of Louis Pasteur (1822-1895) and Claude Bernard (1813-1878) boosted the therapeutic activist approach. Charles-Édouard Brown-Séquard (1817-1894), a founder of modern endocrinology and the president of the French Biological Society, pioneered rejuvenative replacement therapy in 1889. Elie Metchnikoff (1845-1916), the Nobel laureate in medicine of 1908 and Pasteur's protégé and deputy at Institut Pasteur, produced a ground breaking theory of aging and set longevity as a primary goal of human advancement.

In addition to the long tradition of meliorism and progressivism, the cause of life extension was further advanced by prosperous social conditions. Between the end of the Franco-Prussian war in 1870 and the beginning of WWI in 1914, France enjoyed a prolonged period of prosperity and stability, with a significant increase in life expectancy, reinforcing optimism (Anderson 1984, Vallin and Meslé 2001). As Elie Metchnikoff testified of the period, "Soon after the Frankfurt Treaty [1870, following the defeat of the French in the Franco-Prussian war], with a complete inability to take revenge, many progressive Frenchmen turned to peaceful activities. Hence their admiration of intellectual progress, the cult of science and art…" (Metchnikoff 1954, 13, 11). Finot was a true representative of that milieu. He was perhaps the most liberal of the authors discussed so far, as France was one of the most liberal societies in *fin-de-siècle* Europe. In *The Philosophy of Long Life* (1909, first published in 1900) – positively reviewed by Gustave Kahn, Paul Margueritte, Otto Horth, and by Finot's close friend Max Nordau – Finot projects scientific and social progress *ad infinitum*:

> The progress of hygiene; the increased comforts of the working classes; the results obtained by serum therapy, which has revolutionized medical science by giving it the means of fighting infectious diseases, that most important factor in human longevity, all these are so many elements which may perhaps allow us to draw near to the beautiful dream fondly imagined by the authors of *Genesis*. Methusaleh, ancestor of Noah, was, according to the latest Bible criticism, only a myth, but who knows whether, thanks to the progress shown above, this myth may not some day become a reality? When liquid air shall have destroyed the evil effects of the unhealthiness of big towns, and synthetic chemistry have delivered us [sic] from the poisons contained in adulterated food; when electricity facilitates life by reducing its labor; when universal peace rids us of mortality on the battle-field; when humanity at last, thus freed from misery and its warlike instincts, as well as the debilitating principle of hate, shall have found its end in the life-giving domain of love and universal fraternity, then we may see longevity again drawing near to its natural limits. (Finot 1909, 77-78.)

The observed improvements in the quality of life, the decline in mortality, the steady increase in the average lifespan, as well as the existence and the reported growing number of centenarians, reassured Finot in the future success of prolonging the human life to 150 years and beyond. Mere "hoping" was not sufficient – an active search of life-prolonging means was, according to him, an imperative.

According to Finot, human biological development will not be limited to extending longevity. The concept of incessant transformation of life was central to his philosophy, to the grotesque point where he suggested that life "succeeds to the grave, noisy life, with animation ceaselessly renewed" (127), that is to say, the human life will continue in the life of worms in the grave (on which grounds he categorically opposed cremation). Though Finot referred to "Will as a means of prolonging life," yet for him reductionism and materialism held the key for understanding, manipulating and extending life. In Finot's philosophy, biology is reducible to chemistry and physics, and the complexity of a living organism is reducible to an interrelation of its components. Such a reduction, according to Finot, opens the possibility for engineering life, and eventually for life's indefinite maintenance. Through "fabrication of living matter," Finot believed, sentient, immortal beings can be created. Finot was apparently among the first to earnestly discuss this possibility in terms of modern biology and organic chemistry.

Finot points to the inherent disharmonies and fragility of human nature: "the illogical construction of our brains," the fact that "at the time when we at last succeed in understanding life we generally quit the world of mortals" (275). The Homunculi, in contrast, will be free from the limitations of mortality:

> The Homunculi of to-morrow [sic] may thus embellish and brighten the aspect of some thousandth century. Some fine day, strong and powerful, they will perhaps form another kind of humanity, and will claim their rights from men. The produce of quick brains, they will create, by means of synthesis, beings like themselves. Humanity will thus at last be divided into *man-monkeys* and *Homunculi*. (275.)

The idea of creating an "homunculus" was, of course, not new. Finot does review the earlier lore of synthesizing "homunculi" or building human-like "automata": from the myth of Prometheus, through Paracelsus' alchemist theories, stories of "conjuring" homunculi by

Count J.F. Kueffstein (recorded in the Freemasons' Almanac, *The Sphinx*, by Joseph Kammerer) and others, legends of the Golem, the "androids" allegedly constructed by Albertus Magnus and Descartes, Wolfgang von Kemplelen's mechanical chess-player (proved to conceal a man), and more. The novel element in Finot's teachings seems to be the assertion that the quest to create an "homunculus" may transcend the realm of legends, scary literary fantasies, occult sciences, and curiosity chambers, and may gain in feasibility from the progress of modern biology.

According to Finot, the inspiration and hope come, first of all, from the works on "plastidules" or "fine granulations linked together by very slender filaments" (what we might today call "micro-organelles"), that were considered to be the "first basis of life" or life's "elementary" components, and that were studied by Cohen, Huxley, Bütschli, Strassberger, Weitzel, Heitzmann, Haeckel, Bernard, Baer, Weismann, Darwin and others (255). Some plastidules were believed to be immortal, and their composition appeared to be subject to manipulation. The works on "parthenogenesis" or creating "living cells by the help of unfecundated eggs" by Loeb, Morgan, Fischer, Mathews, Witcher, Bataillon, Delage, Giard, Henneguy and others, further strengthened the assurance that life can be purposively manipulated through chemistry and physics (271). Organic synthesis, as performed by Berthelot, Liebig, Würtz, Lilienfieldt, Perkins, Schützenberger, and Sabatier, reinforced Finot's optimism even more. Indeed, Finot wonders "How does animal chemistry produce fatty or albumenoid bodies? How indeed! We know nothing, and we shall know nothing for many years" (266). Yet, despite the current limitations of knowledge, the possibilities of organic synthesis can be limitless: "It would thus be as unjust to attempt to fix bounds for the evolution of chemical synthesis, as it would be bold to assign in advance any limit to physical discoveries" (267).

Finally, the construction of human-like automata or "simulacra of living beings," represents another line of research into the "artificial creation of life." Finot valorizes "the artificial creation of living matter" over "making miraculous automata," biology over mechanics (258). The fascination with "mechanical" models is, according to him, the lot of "simpler" people, and the creation of life directly from inert matter appears to him less promising than manipulating biological "plastidules" that already exist. Yet, according to Finot, the creation of such automata is a powerful direction of advancement. In Finot, the discussion of the "artificial creation of life" is a corollary of the major subject of the book: the prolongation of this-worldly life. Even if the appearance of the "homunculi" may be too remote, the progress of biology will surely enable life enhancement and life extension:

> The possibilities of nature are infinite, as [Thomas] Huxley has so justly said. Nothing then authorizes us to doubt that the intensity of life will be some day rendered more powerful by science. It may not perhaps succeed in creating new life. No matter, so long as it can preserve and greatly strengthen existing life. And that will be enough. (277-78.)

Discussion

In juxtaposing Finot's teachings (of 1900) with those of present-day transhumanists, I would like to suggest the following points. First, Jean Finot may be considered a true pioneer of transhumanism, expressing concerns and aspirations generic to transhumanist philosophy, more than half a century before the term "transhumanism" emerged, and almost a century

before "transhumanism" formed into a recognizable intellectual movement. The relation of transhumanism to Finot's philosophy appears to be more direct than to the beliefs of Fedorov, Stephens, Bogdanov or Nietzsche. Fedorov, it seems, was much better grounded in literary criticism and theology than in science. Fedorov's "philosophy of the common task" called the humanity to unite against death, and to work for the resurrection of ancestors, but did not seem to go far in terms of scientific exposition. Nietzsche too placed a much greater stock in literary theory than in science and technology. Finot, on the other hand, seems to have been well acquainted with contemporary scientific trends and based his optimistic forecasts on these tendencies. And this is the argumentative strategy many contemporary transhumanists employ (e.g. Kurzweil 2005). Consider, for example, the evolutionary proximity of Finot's areas of interest with those of modern transhumanists: "organic synthesis" vs. "nanotechnology," "automata" vs. "artificial intelligence," manipulation of "plastidules" vs. "biotechnology."

Another tenet that Finot emphasized was "transformation" – from the assertion that life does not end in the grave, to foreseeing the emergence of a divide between "homunculi" and "man-monkeys." And "transition" and "transformation" are in the very root of "transhumanism." Bogdanov and Stephens do focus on science, yet the notions of radical transformation of the human form and evolutionary leaps are underplayed in their visions, that concern human beings and human beings only. Thus, Jean Finot, who seems to have been almost entirely forgotten by scholars (even in transhumanist circles), deserves recognition, both as an author of an original, consistent life-extensionist philosophy, and as a major *fin-de-siècle* precursor of present-day transhumanism, at least on a par with Fedorov, Stephens, Bogdanov, or Nietzsche.

The second point that I would like to suggest is that the pursuit of human enhancement and life extension may originate in conservatism, both biological and social. There is a close conjunction between the ideas of life extension, transcending human nature and creating artificial life, in Finot's writings and those of present-day transhumanists. The connection (and progression) between these enterprises may appear logical: the means initially designed to conserve life may exceed their purpose, and beginning as a search to preserve a natural bodily status quo, the aspirations may rapidly expand into attempts to modify nature. It appears to me that these enterprises evolve in this, and not in the reverse order. The primary aspiration is not to modify nature, but to preserve a natural state.

With regard to the social and ideological domains, the authors under consideration act as champions of their parishes. As Fedorov appears as a representative of Russian absolutism, Stephens of American industrialism, Bogdanov of Soviet Marxism, and Nietzsche of German aristocratism, Finot may be well viewed as a representative of French liberalism. Thus, each author represents a particular existing social order, and his vision of human advancement may be seen as a continuation and extension of that order.

Conclusions

In different national contexts, different ideological schemes – secular humanism or religion, discrimination or egalitarianism, idealism or materialism, socialism or capitalism, liberalism or totalitarianism – appear to yield different justifications for the necessity of life prolongation and longevity research and to impact profoundly on the way such goals are

conceived and pursued. As the works of the above-said proponents of human enhancement and longevity exemplify, the authors adapt to a particular national ideological milieu and serve as agents for its continuation. Several conclusions can be drawn from these examples of adaptation of life-extensionism to the specific ideological milieux.

First, these adaptations may question the claims of a particular ideology for supremacy in the promotion of life-extension and life-enhancement. The claims that atheism, capitalism or hedonism are more conducive to the pursuit of longevity, can be countered by historical examples where religion, socialism or asceticism were the foundations. No ideological system seems to have a monopoly, however strongly it asserts that it constitutes the rock-solid ground for this pursuit. It may be that, rather than providing such a foundation, political ideologies enlist the hope for life extension to increase their appeal. Life extension may thus represent a cross-cultural value, yet often involving antagonistic social theories and political movements.

Secondly, in the authors under consideration, the goal of life extension has been associated with a striving for stability and equilibrium, desiring to stabilize and thus perpetuate the current state of the body or personality, and the present social system. In this sense, life-extensionism may be a fundamentally conservative (or conservationist) enterprise. Therefore, the impression that life-extensionism represents a form of utopianism, a fringe or revolutionary movement, or an advocacy of a radical change of the human nature – should be rejected or accepted only with profound reservations. Historically, the proponents of radical life extension may have envisioned no greater change to human nature than the extent to which maintenance of an ancient edifice changes the nature of that edifice. The life-extensionists may indeed have strived for a perfected society, which one might call a "utopia," but that "utopian" society, they hoped, would uncannily resemble the one they lived in, with all or most of its institutions intact and all the near and dear ones alive and around. The life-extensionist movement may have been profoundly anti-revolutionary, if only for the simple reason that opposing the existing social system would nullify public support of longevity research. After a revolution has won, the life-extensionists may side with the winner. As the Russian history exemplifies, after the socialist revolution the life-extensionists swiftly changed their rhetoric from praising rural patriarchy, absolutism and Pravolslav Christianity (Fedorov) to exalting socialism, atheism and state regulation and planning (Bogdanov).

Thirdly, paradoxically, out of the desire for fixity, novelty arises. As the stability of the internal milieu could not be achieved by contemporary medical technology, innovative interventions were sought. Consider, for example, such late 19th-early 20th century developments as Nikolay Pirogov's plaster casts to fixate the bone (c. 1870), Porfiry Bachmetiev's preservation of animals by freezing (c. 1900), or Auguste Lumière's introduction into biomedicine of film and auto-chrome plates to safeguard images of the body (c. 1900). All these can be viewed as technological novelties employed in the service of maintaining constancy. As yet another early twentieth century life-extensionist, the French-American pioneer of organ transplantation and tissue engineering, the Nobel laureate in medicine of 1912, Alexis Carrel contended: "Science has supplied us with means for keeping our intraorganic equilibrium, which are more agreeable and less laborious than the natural processes. …the physical conditions of our daily life are prevented from varying" (Carrel 1935, 180). And as Finot asserted, the primary purpose of biomedical advance is not to change, but to "preserve and greatly strengthen existing life" (278).

Today, the proponents of "Transhumanist/Humanity Plus," "Upwinger," "Extropian" or "Singularitarian" intellectual movements seem to advocate a radical change (enhancement) of human nature and society, almost beyond recognition: attaining unlimited energy, matter availability, space expansion, robotic labor, cognitive enhancement through symbiosis with artificial intelligence, in short, going to the next stage of human and social evolution, with unlimited capabilities and wealth. Similar aspirations were expressed in the *fin de siècle*. Unlimited health enhancement and radical life extension are the first items on the agenda of these movements. In fact, these movements are now perhaps the only ones that openly espouse the cause of radical longevity. Still, even when speaking about changing human nature and society beyond recognition, the underlying primary desire is to preserve *ourselves* and make *our society* more durable. Markets and democracies, of course, figure prominently in contemporary Western discussions of our post-human future. There is perhaps no stronger advocate of competitive "decentralization," of "the movement toward democracy and capitalism" during our evolutionary transcendence, than Ray Kurzweil, president of Kurzweil Technologies Inc. (2005, 406). Such an ideological preference might be expected as, in a capitalist milieu, to doubt the necessity of free markets for progress would be sheer blasphemy. Even when speaking of brain-computer synergy (obviously quite a radical change in human nature), the transhumanists make sure to mention the uploading of *our* personality and backing up *our* memories in a different substrate. Why should a post-human, silicon-based entity care to remember what *we* have done in kindergarten, or rather why should we make it remember? The answer may be that the aspirations for a "back up" derive not from a desire for change for the change's sake, but from the conservative drive for self-preservation and indefinite continuity.

Still, there might be a point of collision between "traditional" life-extensionism and "transhumanism" or "singularitarianism." The singularitarians (such as Kurzweil) will have us believe that human-level artificial intelligence and man-machine synergy are inevitable, given the current trend of accelerating development of information technology. It is this technology that Kurzweil anticipates will help us find effective life-extending means through data mining, will provide a backup for our personal traits for future "uploading" or "fine-tuning," and will direct the repair of our body. But at some stage, Kurzweil believes, the machines will succeed us entirely: in the best scenario our memories will be a component of machine intelligence, and in the worst the machines will entirely supersede the human race. Such a level of change may be too great to accept for a "traditional life-extensionist" wanting to be around in the same (or very similar) body and environment (i.e., it could induce an incapacitating "future shock"). As the super-long-lived Lazarus in Robert Heinlein's *Methuselah's Children* (1958, 141) comments when confronted by radical body modification: "It may be an improvement, but damn it, I say it ain't human."

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