

New Europe College Yearbook 2012-2013



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Editor: Irina Vainovski-Mihai

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ISSN 1584-0298

New Europe College
Str. Plantelor 21
023971 Bucharest
Romania
www.nec.ro; e-mail: nec@nec.ro

Tel. (+4) 021.307.99.10, Fax (+4) 021. 327.07.74



JOSEF SCHOVANEC

Born in 1981, in France

Ph.D. in Philosophy, EHESS, Paris (2009)

Thesis: *Religious origins of philosophy, Heidegger and Jewish mysticism*

Researcher, EHESS, Paris

Conferences in more than twenty countries, especially in Europe and the Middle-East

Articles in the field of comparative religious studies (Judaism, Islam, Buddhism), religion and technology, religious thought and contemporary world

POSTHUMANISM: IS THERE A THEOPHANY IN THE COMPUTER? KURZWEIL AND THE ETERNAL RETURN OF THE SACRED

Abstract

Posthumanism, a broad trend between biology and technology, aims at redefining what human beings will become in a not so distant future. It therefore raises multiple, and still rarely investigated questions for philosophers and social scientists.

My paper, following the general methodology of Max Weber in his study on capitalism and Protestant ethic, is devoted to several potential links between religious philosophical legacies and contemporary research in computer sciences related to posthumanism. Contrary to existing similar publications, I did not choose “Eastern” spiritual movements or small Western sects, but one of the major monotheist faiths. In posthumanism, I mainly focus on one specific figure, namely Ray Kurzweil.

The study involves a comparison between several components of Jewish philosophy and their counterparts in posthuman literature, especially as regards immortality, history, philosophy of history, and the prophetic figure. I also try to show how not only the elements, but their subtle and complex layout, may help to explain the tremendous success of Ray Kurzweil.

This could also prove that posthumanism might be indeed considered, not an overcoming of human nature, but a contemporary, computer-based, quest for what has been since the beginning of time basic questions of humanity.

Keywords: Posthumanism, Kurzweil, philosophy of history, computer, Judaism

Mircea Eliade became famous outside of Romania thanks to his theory of the Eternal Return, defined as a “revolt against concrete, historical time, [the] nostalgia for a return to the mythical time of the beginning of things,

to the Great Time".¹ Yet, as one might expect, Eliade does not oppose frontally "primitive societies" and the "historical man" (modern human beings). The cyclical time "nevertheless (...) made its way into Christian philosophy",² and thus in Western modernity. More archaic schemes of existence "survived besides" modern ones in the theories of Brahe, Kepler, etc. Marxism defined the final golden age as a victory of "archaic eschatologies".³ Many people in Europe and the rest of the world still live by the light of the anti-historistic, archaic, viewpoint. Major writers are nostalgic for it.

In *Mythes, rêves et mystères*, rendered in English by the even more explicit title *Myths, dreams and mysteries: the encounter between contemporary faiths and archaic realities*, he concludes the first chapter on myths in the modern world by saying that the modern world did not abolish "mythical behavior: it inverted its domain: myths are not dominant in essential sectors of life, they were pushed back either into obscure zones of the psyche, or in secondary, irrelevant social activities".⁴ Claude Levi-Strauss famously made a similar statement: what he calls "savage mind" (usual English translation for "pensée sauvage", or "savage thought") did not disappear due to the might of modernity: it merely withdrew to specific, more discreet parts of life. Many other authors could also be quoted, with comparable assertions. Some disciplines even rely upon such a methodological basis, e.g. psychoanalysis, which aims at replacing the individual within a primitive or original framework of his early times or family.

Critics easily dismissed Eliade's statements as politically motivated, and, moreover, linked to an outdated both conception and period of history. My point is not about proving or refuting such a hypothesis by an accumulation of quotations; I would rather discuss the validity of the "withdrawal" thesis, according to which, even the staunchest proponents of the survival of myths in the modern world somehow concede that "modernity" won. Some parts of the human soul or of the universe might resist, some activities such as reading (the example given by Eliade) might still help us escape ordinary, stressful time, but on the whole little can be done, especially in the most dynamic aspects of contemporary growth, such as science and technology. One of Heidegger's best-known and frequently misused quotations, "only a god can save us", by its gloomy side, could to some extent apply to the "withdrawal" hypothesis. Even if it is probably not a fully losing battle, a positive trend, that means favorable to "ancient" components, cannot be considered obvious; and the fate of myth is even less relevant for the majority of tech-savvy citizens and intellectuals.

Another dominant pattern in myth and technology related studies is what I would call the shadow of Heidegger. Heidegger basically focused on the origins of technology (or of the essence of technology), and attempted, albeit less explicitly, to show how one, a high-level intellectual, can mentally control its disruptive influence to some extent. Heidegger, just as many other critical thinkers of technology (Jacques Ellul, etc) focused on an ontology of technology, its supra-human basis. Long story short, technology was seen as a divine or satanic entity that traps human beings. One point was mostly missing from this argument: how humans are the authors of technology, and what it means for them to contribute to such a project. Jean Beaufret, the most influential French disciple of Heidegger for several decades, created a scholarly theory of history, in which he explained that in every historical era one dominant intellectual figure could change the state of affairs: e.g. Galileo, by stating that the universe is written in a mathematical language, did launch the deadly road of technology. Anyway, influence upon technology and science remained off-limits for a majority of ordinary mortals, and the mere expansion of technology a mysterious, deeply threatening process.

The argument of this paper could start from the opposite presupposition: technology will be considered a result of human deeds, not as the result of supra-human entities. "Man is the measure of all things" is a quotation frequently attributed to Protagoras. I cannot reopen now such a broad and ancient debate, but, as in ancient Greece, this statement can help distinguish two major approaches, which by the way are strikingly similar to the philosophical options available more than two thousand years ago: those who, like Heidegger, maintain that technology, in its essence, is outside of human influence (with the exception of an almost Quietist possibility to preserve a tiny part of the internal world unaffected by technological storms and disasters), and those who believe it is a human product, that is to say created by human beings and, unlike Heidegger's *Gestell*, subject to direct human leadership. The dispute, obviously impossible to settle, can at least lead us to what I would call the anthropological origin of technology: technology not only was man-made at some point in history, but it still shares with him numerous deep characteristics. They will be re-used for the sake of the demonstration in the second part of this paper.

In this paper, I will also try to defend a stronger case than Eliade did: ancient religious thought, "myth" for Eliade, "savage mind" for

Levi-Strauss, may do more than simply disappear or retreat to minor parts of modernity; it could well be found behind the very central process of technology, that is to say the least expected place.

The topic of the paper needs now at least two major clarifications or restrictions on the scope of the investigated issues and the nature of what could be called “religious”. First, I will restrict myself to what is today called “posthumanism”, a term probably coined by Vernor Vinge. This might not be enough: posthumanism, as Pepperell states at the beginning of his *Posthuman Condition*, is “employed to describe a number of things at once”: it can mark the end of humanism, the current transformations of what we mean by human, and what Pepperell calls the “general convergence of biology and technology”. The third point could precisely summarize the global perspective of this paper: posthumanism as the gray area between biology and technology, not necessarily how technology influences or will modify biology, but rather the opposite.

Posthuman publications are quite numerous. I therefore will focus on one particular author, namely Ray Kurzweil. This choice may be partly arbitrary; it may also be explained through the tremendous success Kurzweil enjoys, as a writer of best-sellers, as well as a renowned scientist. I will argue that Kurzweil might be considered one of the most sophisticated examples of prominent leaders in posthumanism, technology and religion at the same time. This should not lead to a hasty rejection of other trends in posthumanism; Kurzweil quotes them (see for instance his praise of *The World is Flat*), is their follower (see N. Wiener), and sometimes shares many common points with even rather minor or anecdotal activists. The manifold versions and branches of posthumanism are still interconnected.

The second restriction I would like to enunciate could deal with the other side of the research, that is to say what is understood as “religion”. Although everyone has some understanding of its meaning, being more specific about religion is much more difficult. Definitions of religion are as numerous as authors are, and therefore discussions about the religious nature of something in general are rarely conclusive. Contrary to what existing pamphlets on the religious nature of Kurzweil say, I will not stay with a form of “archaic” religion, some sort of shamanic activity. Religious studies usually oppose what Eliade called “historians of religion”, i.e. scientists dealing with religions in general, chiefly with archaic, “cosmic” or otherwise “oriental-primitive” religions, but at the same time extremely cautious as regards major monotheist faiths: typically, authors such as Eliade, Dumezil, etc, wrote very little on what is commonly understood as

religion in the West. On the other hand, theologians are experts in some major religion, but rarely venture out of its internal themes. I will mostly compare Kurzweil to some aspects of Judaism. It does not mean that this approach is more relevant than, for instance, Jean-Michel Besnier's comparison of posthumanism and some "Eastern" traditions, nor attempts at unearthing the general religious substrate of posthumanism. Reasons and results of my choice will, of course, be given in the argument itself.

Part 1: Religious elements behind the "lush vegetation" of rationality

At the beginning of the *Elementary forms of the Religious life*, Durkheim sets to himself as an objective to "uncover the common ground of religious life under the lush vegetation that covers it".⁵ Durkheim's metaphor certainly alludes to the exotic natural environment of the Australian "primitive" religions that he investigated, but could also be used in a technological context.

Technology is usually perceived as a specific field, fundamentally distinct from any other academic discipline, at times even as an activity unworthy of intellectual thought. Heidegger, in another famous statement, said that science does not think. And technology could also be, not only a zone without thought, but the chief enemy of thought as well. For contemporary social scientists, even those who do not share Heidegger's views, technology is at best a tool, a neutral element on their desk, which can help them in their daily activities, but does not really interfere with their content. Technology is said to be created by unknown, distant non-scientists, or perhaps at best, its theoretic components, by researchers at the opposite end of the spectrum of academic disciplines. An intellectual vacuum is the result of this attitude, and leads to, as usual in similar situations, to less thought out attempts to tackle the issue.

In this first part of my argument, I will try to make an overview of several elements behind the lush vegetation. Such an overview cannot be exhaustive, and I do not intend to create a list of religious trends related to technology. I will straight away exclude the most radical components, such as New Age groups or tech-savvy religious groups as Scientology. My aim is not to describe some colorful entities on the fringes of technology, religion and more or less lawful activities, but to show underlying mechanisms in the very historical and genetic code of technology.

A) Anthropomorphism and technology: is man the measure of all computers?

First, one can notice that relevant vocabulary in the field of technology and science is fundamentally related to human activities. The word “science” comes from the Latin verb *scio*, and its original meaning was to cut or to decide (see the Indo-European root **skei*), later to know. “Technology” is the English form of the Greek *tekhnê*, art or handiwork. “Cybernetics” is related to *kubernêtikê*, the rudder. Many other terms of that lexical field have to do with daily items or tasks, some obvious (mouse, email), some more exotic (robot, from a Czech word meaning hard labor, algorithm, from the name of the mathematician al-Khwarizmi, or “native of Khwarazm”, a province in central Asia). In the non-European world, especially in Arabic and Hebrew, the involved terms have a more abstract, less secular origin. They have less to do with daily life. In Arabic, *science* is often translated by *‘ilm*; but *‘ilm* is a broader term than just the secular or profane sciences. Another frequent translation is *hikma*, with approximately the same remark. Technology could be translated by *fann*, which also encompasses art. Contemporary dictionaries give the Arabic transposition of the English word: *tiknulujya*. Other terms are also used. In Hebrew, the most frequent translation of *science* is *mada’*, from the root *yada’*, which means to know in an even broader sense than the Arabic *‘ilm*.⁶ Technology is translated by *tekhniyot*, similarly to Arabic. I cannot speculate here on whether a Western “go-between” was required to give more anthropomorphism to science and thus start the whole process.

But there is more than simply etymology. Norbert Wiener, considered the founding father of cybernetics, extensively dealt with what he called “the impingement of this circle of ideas [cybernetic circle of ideas] on society, ethics, and religion” and the “social consequences of cybernetics”.⁷ The “impingement” occurs on multiple levels. The technological growth is based upon human desires, “human hunger” and “human thirst”,⁸ as Wiener once put it:

human beings as physiological structures, unlike society as a whole, have changed very little since the Stone Age, and the life of an individual contains many years over which the physiological conditions change slowly and predictably, all in all.⁹

Products of technology are deeply human, too: the best example would probably be the Golem: “the machine (...) is the modern counterpart of the Golem of the Rabbi of Prague”.¹⁰ Countless publications did later show to what extent research, even in hard sciences, is the result of human interactions and values; Bruno Latour and Steve Woolgar’s *Laboratory Life* (1979) became a seminal work.

An aspect of the early decades of technology related to computers is frequently forgotten: it was considered, not an independent field, but as part of the art of prosthesis. Norbert Wiener himself came from that field of research, and one of Kurzweil’s first inventions was the reading machine for blind people (later a voice recognition system). “Prosthesis” may of course be understood as anything helping people overcome their weaknesses, and this creates for instance the link with the Golem, as a mighty guardian of Jewish communities.

Last, some features of advanced cybernetics *per se* has to do with religion: Wiener distinguishes three points: “one of these concerns machines which learn; one concerns machines which reproduce themselves; and one, the coordination of machine and man”.¹¹

B) Posthumanism – an overview

Posthumanism is not a single set of beliefs. Some consider it to be a joke, especially in Europe: this detail may seem anecdotal, but in my opinion it is not, for it is quite telling about underlying cultural components, not equally present throughout the Western world: posthumanism is a predominantly American phenomenon. A parallel may also be drawn between concepts such as postmodernity, which was a leitmotiv among social scientists approximately at the time when posthumanism first gained some momentum. Some social scientists discussed the role of the subject, Foucault became famous among others due to his thesis on the disappearance of the human being as such. Last but not least, posthumanism clearly has some roots in popular culture, science-fiction, as well as a distant, far more ancient religious or purely literary legacy in it. Can posthumanism among hard scientists be seen as a shadowy equivalent, much less elaborate, yet laden with much more computational and scientific power, to similar concepts in social sciences? Due to the lack of systematic studies, I can only speculate; such a research could after all be impossible to conduct: the topics are too broad, and involve

two universes that do not speak the same language and are not used to communicating with the outside world.

Anyway, the extensive realm of posthumanism spans over almost all parts of what made the second half of the 20th century: among posthumanists, some are technicians and inventors, some are feminists, some are religious scholars (G. Scholem played a significant role in early stages of computer sciences), some politicians, some uncategorisable theorists and some terrorists (such as the Unabomber). Some researchers investigated posthumanism as any other field of research; the most prominent among them is probably Fukuyama, with *Our Posthuman Future: Consequences of the Biotechnology Revolution*. Interestingly, it may be difficult to distinguish in posthuman literature what is exactly considered mere analysis or description of somebody else's thought, what is a firm belief of the author himself, and what could be his dreams or even entertainment. Besides Fukuyama himself, Raymond Ruyer, author of the *Gnosis of Princeton (La Gnose de Princeton)* could be an excellent example, for it remains unclear to what extent his book described an actual Gnostic group, Ruyer's wishes, or was just a piece of fiction.

Authors influence each another, but in a much less traceable way than in social sciences: due to the fact that hard scientists seldom publish their theories and talk about their general philosophy, ideas circulate during private meetings, and remain more or less elaborate. At times, the example given or the pattern of thought involved in such moments of free expression are veiled references to some physical or mathematical theorem, which can be understood only by a handful of chosen ones – I am of course not part of them, which has an impact upon my own investigations.

Briefly said, posthumanism, however complex, detached from reality, it may seem, in my view always reflects deep underlying hopes and questions of human beings. This general statement might not be as philosophical as it sounds. One brief case-study, which by the way will indirectly be discussed in the paragraph on philosophy of history, could be the issue of death. Posthumanism, just as almost any other literary genre in human history, rises the issue. Many approaches are used, oftentimes combined, with more or less explicit influences among authors: this also shows the experimental, less institutionalized nature of posthumanism. One major trend of posthumanism deals with death: Robert Ettinger published in 1962 his *Prospect of Immortality*, in which he advocated cryonics, in other words freezing of bodies before their future resuscitation; Ettinger was much laughed at, his book was compared to pure fiction (which, by

the way, is neither wrong nor negative, as Ettinger himself acknowledges his link to literature and classics), yet cryonics is today a growing sector of the American economy. Furthermore, the issue of immortality came again and again, through various means, in the limelight: Kurzweil is a customer of a cryonics company, but also promoted immortality through healthy lifestyle and increase in life expectancy (the idea was that the increase of life expectancy would exceed aging, thus the title of one of his early books *Fantastic Voyage: Live Long Enough to Live Forever*). Then Kurzweil argued immortality could be reached through replacement of the “normal” body by enhanced cyber-bodies, through the not that distant Singularity (this term will be explained later), or even by a radical transformation of what being alive and human means (in the first pages of his *Singularity*, he outlines the “pattern” theory: being myself is merely a pattern, which could therefore be transposed to a plurality of supports). All those approaches are not mutually exclusive; they are at the same time fictional and deeply scientific (Kurzweil’s publications are filled with formulas and he is considered one of the greatest scientists of all times). They involve the research and the researcher as a person. This is why posthumanism should, in my opinion, be understood as a human phenomenon, part of social sciences. If individuals chose this or that part of posthumanism due to personal needs or preferences, on a collective level, posthumanism reflects collective choices and values. One can attack them, depict them as childish. A recently published book, *The Immortalization Commission*, by John Gray, has an easy fight against Kurzweil and other posthuman scientists; however, in death-related issues, there are no easy answers, and they could tell more about ourselves by just not being dismissed as irrelevant. And contrary to Fukuyama, I will not argue that posthumanism will change human nature or human society; I would reverse the causal link. This is where my research begins.

C) The hypothesis of Judaism

Jean-Michel Besnier, among the very few French researchers interested in posthumanism asks the following question: “The fact that the most ancient wisdom takes aim at this spiritualisation of the human being (...), and the fact that they do it today with the immaterial technologies, should question us.”¹² Besnier, as many others, even among posthumanists themselves, gives the priority to “Eastern” traditions and creeds, such as Buddhism.

Some epistemologists argued, especially several decades ago, that science was a specifically Christian phenomenon (Ernest Renan and many others therefore maintained that Semites were unable to think in a scientific way). Those theories are long forgotten. Moreover, I do not think that posthumanism can be explained through Christianity. A partly posthuman author that in my view could be related to a Christian-American worldview is Friedman, *The World is flat*. The title itself might hint to a famous religious debate involving the Church, and to one of the most famous quotations of the Bible (Luke 3:4 quoting Isaiah: "Make ready the way of the Lord, make his roads straight"). Friedman promotes a Gospel of wealth, available to anyone ready for hard work, the USA being a blessed country at the world's vanguard. Albeit Friedman is part of Kurzweil's bibliography, he can hardly be considered a "full" posthuman. Too many elements are missing, and I do not think they are to be found in mainstream American Christianity.

Max Weber famously compared in his seminal work the Protestant ethic and what he called the "spirit of capitalism". Perhaps ethics of different religions, or other components thereof, could help explain posthumanism, probably not in its complex dynamics and other subtleties, but as regards the general pattern of rather distinctive components. In my view, even if Buddhism and Christianity can explain many aspects of posthumanism, I would argue that more of its elements are to be found in Judaism, such as complex philosophies of history (non-linear and with distinctive laws of history, which are at the same time absolute and yet require human activity – see for instance Andre Neher, *Le Puits de l'Exil*, 1966, and his comparative study of the laws of history among European Rabbis), a particularly acute presence of the idea of the end of the world (attractive and scaring), the role of prophets (as seers and as protectors of the community), the link between the Golem and early phases of computer science (see G. Scholem), recently the issue of security as a semi-religious activity, etc.

More importantly, those elements are not only present, but assembled in a coherent way, with specific "doses" of every ingredient. As we will see, I think that this partly makes the overall success or superiority of Kurzweil over, for instance, the Unabomber.

Last but not least, and this is no secret for anyone even if it is not clearly said or dismissed as irrelevant, many authors involved in posthumanism are Jewish, sometimes with a strong Jewish background, and obtain their greatest successes in America and Israel.

Part 2: Putting pieces of a religious heritage together

Ernst Troeltsch, but many other authors could be also quoted, described the church as a combination of a social structure with a belief, and how the former interfered throughout the church's history with the latter.¹³ There certainly are, and by the way one of the main aims of Troeltsch was to show the Roman-Catholic church was not the only option for Christians, many models and different "dosages" of those ingredients in structured modern religions: the fact that for instance Judaism does not have a Catholic-like church does not make an exception of it.

What probably makes R. Kurzweil unique or at least remarkable, is not so much the fact that he deals with more or less religious beliefs, as his opponents argue. It is his subtle combination of both legs of the ideal-type of Troeltsch. The Unabomber, on the contrary, proposes a much more conventional, even frustrating "code of ethics", if I may say so: he criticizes the "fulfillment" promised by modern society,¹⁴ and extols individualistic, traditional values, which virtually forbids him any concrete role as a social leader.¹⁵ In my view, his theory of history is awkward because of at least three mistakes, which Kurzweil avoids: he admits that the validity of his system is not obvious, and has conditions; that among those conditions is the possibility of a U-turn in progress and growth; and therefore he has to draw a distinction between two kinds of technology, one which can only grow, and one who can shrink.¹⁶ Kurzweil's system is much more attractive and homogeneous.

A) Prophecy

Calling, or comparing Kurzweil to a "prophet" may certainly cast doubt on the speaker's objectivity, for the term has many religious overtones. In this part, by "prophet", I simply mean someone's ability to foresee the future. And in that respect, Kurzweil is second to no one.

To start with, Kurzweil describes himself as such. Books by Kurzweil, and *The Singularity is near* is an excellent example, usually start with a long list of his personal and scientific successes, which put a major emphasis on the accuracy of his predictions for more than twenty years. His Wikipedia site (http://en.wikipedia.org/wiki/Ray_Kurzweil) also stresses his unparalleled capabilities as a futurologist; even more remarkably, Kurzweil has a specific Wikipedia page for his predictions,¹⁷ on which Internet users discuss his, mostly successful, prophetic gifts. Titles and

themes of Kurzweil's books almost always underline aspects related to time, be it time as what separates us from death (*Fantastic Voyage: Live Long Enough to Live Forever* and *Transcend: Nine Steps to Living Well Forever*), or specific ages in history (*The Age of Intelligent Machines; The Age of Spiritual Machines; The Singularity is Near*).

At the Singularity University, he held until recently the central chair of "Future Studies & Forecasting" (currently held by Paul Saffo due to Kurzweil's new appointment at Google): contrary to all other chairs, which deal with for instance biotechnology, energy or medicine, Kurzweil's chair was the only one to really address time and give to the research of the University a historical perspective. In speeches made by other lecturer of the University, at least those which I have listened to, Kurzweil is always quoted when it comes to predictions. His lectures, especially on the regularly-held events of the University, give updated versions of previously shown PowerPoint slides: the new data always match the diachronic lines, and thus further strengthen Kurzweil's laws of history.

But here is more. Ray Kurzweil's presentations make use of subtle techniques in order to create implicit links between himself and history. One of his favorite examples, given in almost any lecture, of what he calls "exponential growth" is his cellphone (he shows it while talking) and his former computer, the one he used when he was a student. Kurzweil not only comprehended laws of history: he witnessed them, benefits from them, perhaps even, as an inventor, created history: he embodies it. Nearly every lecture given by Kurzweil begins with a retrospective: it may show that Kurzweil witnessed some event or era others in the room did not and could not due to their age, or that he was himself from the very beginning (when he was five, he knew he would become an inventor¹⁸), or that he has corresponded with Noam Chomsky for fifty years¹⁹ and thus has a special link to him. Recognition of Kurzweil's seniority is part of learning his theories.

The personal link of Kurzweil to history can be shown even in most unlikely cases: he uses the example of what a "kid" living next to him did (the "kid" is never named, only defined by his proximity to Kurzweil) from what students of Kurzweil's generation had by creating the Internet company Facebook.²⁰ Kurzweil's prophetic gift also applies to political issues: in his first book he wrote about the fact that "the Soviet Union would be swept away by decentralized communication (...). I said this would destroy the centralized information authorities relied on (...). That's exactly what happened".

Long story short, Kurzweil and history of technology are one: he embodies its advances and shares what was once called the spirit of history. This might be reminiscent of a similar issue of prophets in the olden days: the necessity to prove that they are not false prophets. The Bible draws the distinction between them according to the origin of their knowledge:

Thus saith the LORD of hosts, Hearken not unto the words of the prophets that prophesy unto you: they make you vain: they speak a vision of their own heart, and not out of the mouth of the LORD (Jeremiah 23:16).

Any prophetic figure therefore has to prove his or her solid, personal rooting in history and facts. Kurzweil himself described, during his 2012 Google talk, the main difference between himself and the others: they make “linear extrapolations”, but he takes into account the exponential nature of history.²¹

B) Content of the doctrine: the exponential growth and the tipping point

Summarizing the actual content of Kurzweil’s theory of history would be off-limits to this paper, and many publications are already devoted to the topic. What I would like to show is how Kurzweil’s laws of history fit into an ancient pattern, and how they contribute to his overall success.

In comparison of his rivals in the field of posthumanism, Kurzweil offers without any doubt a much more stimulating “package”. As a general rule, in order to have an impact, preaching a linear history does not fit the purpose; a more complex theory of history is required, as Reinhard Koselleck has shown. An almost naive theory of progress, such as expressed in Thomas Friedman’s *The World is Flat*, may boost one’s optimism, but does little to attract young enthusiasts. On the other hand, the opposite theory of history, a constant decline, such as enunciated at the very beginning of the *Manifesto* of the Unabomber (“The Industrial Revolution and its consequences have been a disaster for the human race [...]. The continued development of technology will worsen the situation”), greatly restricts the sheer number of potential followers and does not give much hope. Truly postmodern theories of history, such as outlined by Foucault or, in contemporary America by so-called neo-luddites and critics of technology such as John Zerzan, are by definition much more

fragmentary, void of a general historical perspective and thus may lack the associated power on the minds of young promising individuals.

The short list of the key components of Kurzweil's philosophy of history should begin with his concept of "exponential growth". As previously said, according to his own analysis, exponentiality is the main difference between Kurzweil and other futurists. Entering Kurzweil's research circle means chiefly getting a deep understanding of what exponential growth means, or, with Kurzweil's terms, how "pervasive it is".²² But here is more:

Let me start by underscoring that key point which is the exponential growth of information technology, which may seem obvious, but it is remarkable how unobvious it is. One of the reasons for that is our intuition is not exponential – it is linear.²³

I cannot enter into details here about the numerous examples of exponential growth Kurzweil gives in his speeches and lectures. I simply would like to underline three more or less hidden ramifications. First, Kurzweil has specific arguments to prove that exponential growth is truly his theory: already known similar thesis, such as Moore's law, are at best "one example",²⁴ based upon ancient technological paradigms. Selected examples and anecdotes prove that Kurzweil created or at least witnessed both the theory and concrete applications behind it. Exponential growth is as specific to Kurzweil as $E=mc^2$ is linked to Einstein. Next, the law of exponential growth is stronger than material limits: when the technological paradigm is no longer valid, for instance when vacuum tubes reached their minimal possible size and therefore should have stopped progress, a new paradigm come from nowhere. This point could, but it is my personal speculation, be put in perspective: the term "paradigm" and shifts from one paradigm to another are concepts that everyone associates to Kuhn's *Structure of Scientific revolutions*. Yet, in Kuhn's approach, somewhere between outright postmodernism and Heidegger, paradigms are created and disappear randomly, in a kind of uncertain struggle or war. Kurzweil gives to this worldview a missing backbone, or, in philosophical jargon, re-ontologizes what was until now unruly evolution. The law of exponential growth is also more powerful than what Marxists called the superstructure: for instance, the economy and its fluctuations such as the Great Depression and the recent end of the ".com" bubble have no impact on it. "Nothing affects it".²⁵ Last, the theory of exponential growth is compatible with many other conceptions of

history, which contributed to Kurzweil's success beyond traditional limits of the Silicon Valley. Among them is what I would call the "oriental" way: in several publications, such as the last approximately hundred pages of the *Singularity is near*, Kurzweil shows how close his ideas are to various spiritual trends: "some Buddhist philosophies insist on the fact that there are no real boundaries between us. It seems that they are talking about the Singularity".²⁶ As such this is nothing new for posthumanism: Robert Pepperell's *Towards a theory of conscious art* contains chapters called "Zen and Tao" or "Nen and reflection". Kurzweil's overall vocabulary is also telling: depicting history of the universe as a succession of epochs of "increasing self-awareness", his own history as a "progressive awakening" when he became conscious of the Singularity.²⁷

Another key component of Kurzweil's theory of history is the Singularity itself. The Singularity might be compared to the coming of communism for Marxism: technically, one can determine when it should happen (the law of history is rather precise and mathematical), but very little descriptions of the concrete process and the result are available. The few poetic sentences Kurzweil has devoted to this issue are usually quoted as an answer ("wake up of the universe", etc). Again, the aim of this paper is not to summarize them nor to refute them: I am simply trying to underline several consequences. The Singularity became, even more than exponential growth, an exoteric symbol for the group. It is contained in the name of the Singularity University, in its logo. It also defines a general psychological attitude as regards time, for the Singularity will most probably occur during our lifetime: Kurzweil's group therefore shares with early Christianity and several smaller religious groups a strong messianic feeling. The author of the www.facingthesingularity.com website, now intelligenceexplosion.com, puts it in dramatic and Biblical terms: "The clock is ticking. AI is coming. And we are not ready."²⁸ Or: "we find ourselves at a crucial moment in Earth's history. Like a boulder perched upon a mountain's peak, we stand at an unstable point. We cannot say where we are". There also is a distinct psychological attitude as regards hierarchy, for the one (Kurzweil) who became aware of Singularity will probably make it arrive before his death (and thus never die).

In a nutshell, Kurzweil's theory of history is embedded within popular conceptions or beliefs: it most probably helped to have it accepted by many. Kurzweil, in one of his lectures, says: "pretty amazing how well it [facts and his predictions] comes together"; one could wonder about the same things as regards the puzzle of his own doctrine.

C) The rescuer: security and protection, empowerment for all

In addition to his knowledge of the future, Kurzweil is an active actor of it. This does not contradict the model of Biblical prophecy, since ancient Jewish prophets were usually involved in political or social activities, which by the way cost them dear. In the following part, I will illustrate two domains of Kurzweil's action: he protects from danger and bestows power upon all.

The idea that prophets protect their people is nothing new. Several places in the Bible underscore this topic, such as: "and by a prophet the LORD brought Israel up out of Egypt, and by a prophet was he preserved" (Hosea 12:13). The idea that technology is ambivalent, an opportunity and a threat, is nothing new. It appears as such at the beginning of the *Posthuman Condition*:

rather, I wish to examine a distinct kind of self-awareness of the human condition that owes something to our anxiety about, and our enthusiasm for technological change, but is not entirely determined by it.²⁹

What I would call pre-posthumanistic literature contains many occurrences of such anxiety and enthusiasm: a common pattern of stories across cultures is the them of the mighty sorcerer or king, someone endowed with superior powers, ultimately misusing them. An even more dramatic variant is when the mighty person creates a human-like entity, which then runs out of control, such as in *Frankenstein, or the modern Prometheus* (to note that the title itself of the novel sounds somehow posthumanistic), the Golem, etc.

Once again, Kurzweil, albeit he basically works with the same themes and items, is much smarter than the Unabomber. The Unabomber sees the same progress of computers and technology as Kurzweil, and just as him feels the need to help, to avoid a major catastrophe for humanity. But his logic is much simpler: since the disaster cannot be avoided, one has to hasten it, so as to make it smaller:

If the system breaks down the consequences will still be very painful. But the bigger the system grows the more disastrous the results of its breakdown will be, so if it is to break down it had best break down sooner rather than later.³⁰

As a result, the only remaining role for the Unabomber is a disruptive one: “revolutionaries, by hastening the onset of the breakdown will be reducing the extent of the disaster”.³¹ A heroic death might be the ultimate result: “it may be better to die fighting for survival, or for a cause, than to live a long but empty and purposeless life”.³² Such a conception of the role of the chief of the messianic group cannot yield major results, for it only attracts a tiny margin of researchers and leads to negative consequences for the author.

Kurzweil’s attitude is, when one take every item separately, only slightly different from the Unabomber’s, but the elements are so well assembled that the global picture is radically different. Kurzweil, just as the Unabomber, does not hide the dangers of technology; they do not use the same examples (generally speaking, the Unabomber uses older technology, such as cars, to illustrate his theories, whereas Kurzweil mentions rather recent software, computers, etc), but by and large the global picture seems threatening in both cases. Kurzweil could be even worse than the Unabomber: while the latter threatens with loss of freedom and destruction of the environment, the former depicts woes such as destructive nanobots, able to destroy the whole biomass within hours.³³ Kurzweil uses the term “GNR” (genetics, nanotechnology and robotics) and claims it could lead to even worse outcomes than NBC weapons.³⁴ If the Singularity fails, the universe could end as “gray goo”.³⁵

But unlike the Unabomber, Kurzweil uses this horrific descriptions as a proof that he has understood the dangers, and that he can lead us to a “constructive Singularity”.³⁶ Kurzweil at times introduces himself as a security expert, be it in his major works or in his shorter essays.³⁷ Speaking in front of the Israeli President and Prime Minister only strengthens that role. His posthumanism thus has another dimension, which Pepperell, Fukuyama and Friedman do not possess: the requirement of an active involvement. For them, the laws of history are already clear, and one can simply wait until the posthuman age fully arrives. Yet they are, for obvious reasons, much less attractive and inspiring than Kurzweil.

I will not enter here into the broader issue of danger and religions, or of the role of anxiety in human life (Heidegger would use the term *Sorge*). Nevertheless two subtle facts may be pointed out: in Kurzweil’s case such as in religions with what Otto called *tremendum*, the one who protects is also to some point the master of the ultimate danger, the “*hagadol ve-hanora*”, the great and the dreadful, two main attributes of God in Judaism. Next, the protection in such a system requires a certain level of

faith. Of course, this is not as obvious as in small, demonstrative religious groups. However, some elements point into that direction. For instance, one of the speakers introducing Kurzweil, after a long list of compliments, concludes as follows:

Have you heard of Plato, Aristotle, Socrates – philosophers. And Ray is a philosopher too. But more importantly and foremost he is an engineer. And when it comes to these tough questions of creating a mind, philosophers are useful, but I would put my money on the engineers.³⁸

His disciples are sometimes even more explicit: the website of Luke Muehlhauser, executive director of the Machine Intelligence Research Institute, may be referred to again. In September 2012, the address of the website was entirely Kurzweilian: www.facingthesingularity.com Today, in July 2013, the website moved to the address <http://intelligenceexplosion.com>. The main picture remained the same: an edited version of the *“Wanderer above the Sea of Fog”*. The text mainly deals with the internal dilemmas as regards faith and religion in the age of nearing Singularity.

Kurzweil introduces another feature in his posthumanism: a concrete role for almost everyone. The website of the Singularity University asks: “What program is right for you?”. And Kurzweil himself states loud and clear: “everyone has the ability to solve problems”.³⁹ Two factors related to inclusiveness represent a non-negligible hindrance for the spread of posthumanism: the “future does not need us” syndrome, and an excessive elitism. The Unabomber fights against the first, but promotes the second: his “small core of deeply committed people”.⁴⁰ “Who are intelligent, thoughtful and rational”⁴¹ exclude almost everyone. Many of his statements do not promote research among his (nonexistent) students:

Science and technology provide the most important examples of surrogate activities. Some scientists claim that they are motivated by “curiosity”, that notion is simply absurd. Most scientists work on highly specialized problem that are not the object of any normal curiosity.⁴²

All this under the subtitle: “The ‘bad’ parts of technology cannot be separated from the ‘good’ parts”.

Other proponents of posthumanism are struggling with the issue of their own utility: once again, laws of history too clearly stated lead to the dilemmas expressed in the pivotal essay by Bill Joy, “Why the future

doesn't need us" (2000): such a "passive" posthumanism cannot be a rallying theme. Kurzweil should have fallen into both traps, due to his general philosophical options. Yet, in my view, he avoids both of them.

The Singularity University is highly selective, and Kurzweil frequently boasts with the number of applicants versus the available positions. However, the selection is based on criteria which let it, at least symbolically, open to anyone, in line with the American dream: relevant, at least in theory, is not money, nor intelligence; are admitted "those who can change the world, and those who already have changed it somehow".⁴³ Research activities at the University spread in many directions, so that almost anyone can join. According to Kurzweil, "the core" of the curriculum at the University are projects of the students. They choose a problem in the world, and use the concepts coined by Kurzweil (mainly the exponential growth) to "solve that problem". Another aspect of the University is its global reach: some of its projects have to do with the Third World and its needs (such as water supply), and Kurzweil frequently underscores that the benefits of Singularity are slowly coming to Asia and Africa too.

Another central theme, becoming entrepreneurial and creative, not only places the University in mainstream American culture, but also represents a remedy for passivity. Students are encouraged to contribute to the next stages of exponential growth, to the arrival of the Singularity, exactly as Kurzweil did and does. He promotes the belief in "the power of human ideas, that sort of religion I was schooled in (...) that human ideas can change the world".⁴⁴ He adds: "what I have learned in my life is from my projects. I have a vision and a passion", which students should share too. Kurzweil, who above all defines himself as "inventor and futurist", frequently shifts from the second to the first role. And so rescues his own legacy.

Conclusion

History is sometimes full of irony. Technology, the greatest fear of Heidegger, could after all strengthen myth and beliefs, bring them from their Eliadian *illo tempore* into modern days. In my research, I focused on mainly one figure of the posthuman movement, namely Ray Kurzweil. I have argued that the key components of his system, especially as regards the law of history, are more than reminiscent of analog elements in Judaism.

Moreover, Kurzweil managed to combine them in a distinctive way. The future is determined, but we have to create it. It is full of dangers, but it is full of hope. We (or he) are a highly selected elite, but anyone can join us and every corner of the world will soon benefit from from the Singularity. We are the most rational of Westerners, but are close to our favorite Oriental spirituality. This highly successful synthesis, more than anything else, can show the deeply human and humane basis of theories behind what is called posthumanism. And what, obviously, could be called an eternal return of the sacred. After all, Kurzweil created the “law of accelerating returns” (with the plural form). Eliade was probably not that wrong.

There is one last aspect I did not discuss. The paper is built on the hypothesis that some components of Judaism helped to build some successful philosophical and technological systems in the posthuman realm. However, the opposite might also be true: the role of extreme high-tech, in fact or at least in the collective psyche, in the future of Judaism. But this is another story.

NOTES

- 1 ELIADE, Mircea, "Mythes, Reves et Mysteres", *NRF*, 1957, p. xi.
- 2 ELIADE, Mircea, *Cosmos and History, the Myth of Eternal Return*, Torchbooks, 1959, p. 143.
- 3 *Ibid.*, p. 149.
- 4 ELIADE, "Mythes," p. 38.
- 5 DURKHEIM, Emile, *Les Formes elementaires de la vie religieuse*, PUF, 2003, p. 7.
- 6 In Biblical Hebrew the verb is also used for sexual intercourse ("vayeda' qayin et ishto vatahar va teled...", Gn 4:17, "And Cain knew his wife; and she conceived, and bare...") or for the ability to distinguish ("lada'at tov vara", Gn 3:22, "to know good and evil").
- 7 WIENER, *God*, p. viii.
- 8 WIENER, *Invention*, p. 3.
- 9 WIENER, *God*, p. 92.
- 10 *Ibid.*, p. 95.
- 11 *Ibid.*, p. 11.
- 12 BESNIER, *Demain les Posthumains – Le futur a-t-il encore besoin de nous ?*, p. 67.
- 13 TROELTSCH, Ernst, *Schriften zur Bedeutung des Protestantismus für die moderne Welt*, De Gruyter, 2001.
- 14 UNABOMBER, §64.
- 15 "Today people live more by virtue of what the system does FOR them or TO them than by virtue of what they do for themselves", *ibid.*, §66.
- 16 *Ibid.*, §208.
- 17 http://en.wikipedia.org/wiki/Predictions_made_by_Ray_Kurzweil
- 18 Example given at the Authors at Google presents, Ray Kurzweil, *How to create a mind*, November 16, 2012.
- 19 First sentences of his talk *The Web Within Us: When Minds and Machines Become One*, 2011.
- 20 *The Web Within Us: When Minds and Machines Become One*, 2011.
- 21 Authors at Google presents, Ray Kurzweil, *How to create a mind*, November 16, 2012.
- 22 *The Web Within Us: When Minds and Machines Become One*, 2011.
- 23 *Keynote speech, Singularity University Executive Program*, November 2009.
- 24 *Title of the first show slide at the The Web Within Us: When Minds and Machines Become One*, 2011.
- 25 *The Web Within Us: When Minds and Machines Become One*, 2011.
- 26 KURZWEIL, *Singularity*, p. 414.
- 27 *Ibid.*, p. 2.
- 28 <http://intelligenceexplosion.com/2012/value-is-complex-and-fragile>

- 29 PEPPERELL, *Condition*, p. 1.
- 30 UNABOMBER, §3.
- 31 *Ibid.*, §167.
- 32 *Ibid.*, §168.
- 33 UNABOMBER, *Singularity*, p. 427.
- 34 *Ibid.*, p. 437.
- 35 This expression was seemingly coined by Eric Drexler, *Engines of Creation*, 1986.
- 36 KURZWEIL, *Singularity*, p. 433.
- 37 See for example "Nanotechnology, Dangers and Defenses", www.kurzweil.ai.net
- 38 Authors at Google presents, Ray Kurzweil, *How to create a mind*, November 16, 2012.
- 39 *The Web Within Us: When Minds and Machines Become One*, 2011.
- 40 UNABOMBER, *Manifesto* §189.
- 41 *Ibid.*, §187.
- 42 *Ibid.*, §87.
- 43 *The Web Within Us: When Minds and Machines Become One*, 2011.
- 44 *Perspectives on the Singularity, Singularity University Executive Program*, November 6, 2009.

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