

## ON THE NATURE OF THE SYMBIOTIC MAN IN JOËL DE ROSNAY

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**ABSTRACT :** This study aims to understand the nature and implications of symbiotic man in Joël de Rosnay. According to this futurist, the man of tomorrow will only be a symbiotic man, that is to say a hybrid man who shares his biophysical heritage with technological equipment. Inspired by Darwinian evolutionism and technological convergence, he believes that man in his current configuration has an approximate biophysical potential and that only his fusion with the machine could guarantee him optimal development. This man whose biophysical aspect wants to be mechanized, Joël de Rosnay calls for him, going so far as to establish him as a paradigm. However, is such a man who stands out for his hybridity with the machine not rather a non-human whose promotion would be accompanied by an attack on the generic and ontological heritage of the human? This is the nagging question that will be the subject of our study, in the light of an analytical-critical approach.

**KEYWORDS:** *Cyborg, evolutionism, human nature, humanism, Symbiotic man*

### I. INTRODUCTION

Contemporary science is revolutionizing the understanding of the elements that constitute our physical, biological or environmental world. Elementary particles, the nucleus, genes, cells or the brain, in particular, are no longer designed as they were around thirty years ago <sup>1</sup>. This is the observation made by Joël de Rosnay in *Surfing Life* before establishing that man in his current constitution has a very approximate and rudimentary biophysical potential, so that only his confidence in biomedicine and biotechnology can allow him to compensate for this glaring deficit. It follows that contemporary technoscientific dynamics gradually constitute the basis of several conceptions of man, which conceptions are performing well and stand out for their capacity to gradually distance us from biological man. This is how we witness in turn the rebellious man <sup>2</sup>, the simplified man <sup>3</sup>, the repaired man <sup>4</sup>, the duplicated man <sup>5</sup>, the augmented man <sup>6</sup>. It is in this resolutely evolutionary/evolutionary perspective that the futurist Joël de Rosnay postulated the advent of symbiotic man <sup>7</sup>. This symbiotic man that he calls for symbolizes the result of the fusion between man and machine, which he also considers as the human variety of the third millennium, a millennium of strong expressiveness of the technological convergence that we now group together under the acronym NBIC (Nanotechnologies, Biotechnologies, Computer Science, Cognitive Science). The offer of this reflection therefore consists of understanding the meaning and implications of this new conception of man who is obviously a cyborg, a mutant, in short a biosynthetic being and a mark of more

<sup>1</sup>Joël de Rosnay, *Surfing life, how to survive in society fluid*, Les Liens qui Libération, Paris, 2012, p. 4.

<sup>2</sup>Albert Camus, *The Rebel Man*, Gallimard, Paris, 1951, 382p.

<sup>3</sup>Jean Michel Besnier, *Simplified Man*, Fayard, October 2012.

<sup>4</sup>Joël de Rosnay, *And man created life..., the crazy adventure of architects and DIYers of life*, Les Liens qui Libération, France, April 2010, 304p.

<sup>5</sup>Gérard Hubert, *The duplicated man, human cloning: fear and seduction*, l'Archipel, Paris, 2000, 265p.

<sup>6</sup>Ray Kurzweil, *Humanity 2.0 The Bible of Change*, M21 Editor, 2007.

<sup>7</sup>Joël De Rosnay, *Symbiotic Man, look at the third millennium*, Seuil, Paris, 1995, 350p. For me, writes the author, the man of the future will be the symbiotic man. Little different from 20th century man, but having, thanks to his biological, psychological or biotic connections with the cybiont, extraordinary means of knowledge and action. *Ibid.*, p. 128.

outrageous technoscientific progress. . In truth, technological devices and in particular technical assistance cannot only be considered as an application of scientific knowledge aimed at replacing man with meticulous techniques. But these assistances must be understood as conditions of human existence, that is to say extensions of our perceptual, motor, cognitive, social and emotional properties and qualities in work or life situations.

If we admit that a form of symbiosis between man and his technical productions/objects is possible as a means of assistance for his various activities, it should be said that the symbiotic man in Joël de Rosnay transcends this dimension that we could say assistantship, to translate the pure and simple fusion of man and machine. It is indeed a man who carries within him a technological device [half-man, half-machine] and not only one who benefits from a technological contribution in terms of assistance as a user of Smartphone, PC, or any other machines to facilitate its actions. The author of *The Symbiotic Man* is clear on this subject:

The line that separates the natural from the artificial is becoming increasingly blurred. [...] Information processing machines will become more and more intelligent, but living beings will also be subjected to profound biological modifications by biotechnologies. Many biological functions will be unfoldable on machines. Conversely, machines will acquire quasi-biological characteristics. There is evolutionary convergence. Technology invades the biological and biology invades the world of machines. [...] There will no longer be any fundamental differences between artificial nature and natural artifice <sup>8</sup>.

If we can admit that human plenitude is still guaranteed in the previous dimensions of man, it would not be superfluous to cast doubt on the humanity of this symbiotic man that Joël de Rosnay calls for. This is why it seems plausible to us in this reflection to identify the destiny of human nature in this “ symbionization ” <sup>9</sup>of our being. To resolve this imbroglio, we are going to rely on a diachronic and critical approach to, on the one hand, try to identify the sources of this Rosnayan conviction to merge man and machine, and above all to make it a condition of our flourishing. On the other hand, we will analyze this conception of man in the wake of trans /post/abhumanist movements, which constitute, so to speak, fertile grounds for the promotion of this new type of man with an uncertain destiny.

## II. UNDERSTANDING THE FOUNDATIONS OF SYMBIOTIC MAN

Thinking about the relationship between humans and technology in terms of symbiosis is not exclusive to Rosnay and even less something new for our time. Before the futurist, a lot of effort was made to show that humans are inseparable from machines as the two are mutually merged [G. Simondon 1958], that the man-machine relationship is the first model of all relationships [ Licklider 1958], or that anthropogenesis is empirically technogenesis [B. Stiegler 1989]. Under this prism, the advent of the machine as an object making it possible to relieve man 's work was appreciated as a spectacular advance in human civilization.

Today, the machine is no longer just an object external to man; biotechnology and particularly synthetic biology demonstrate that man and machine can now constitute an integrated whole. Furthermore, if all these conceptions of man-machine symbiosis have the particularity of defining an interdependence between the two entities, it must be said that Joël de Rosnay by symbiotic man, clearly designates a hybrid man who carries within him a technological apparatus. So,

the application of the notion of symbiosis to the characterization of the relationship between humans and machines comes from the initial work of Licklider <sup>10</sup>who was the first to use this notion to outline the future of computing by emphasizing that the computer had to leave the field of “calculations” to transform into a modern communication tool in order to create a system where man and computer maintain a symbiotic relationship. This mixed partnership would be able to use the best of man and the

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<sup>8</sup>Joël De Rosnay , *The symbiotic man, a look at the third millennium* , Seuil, Paris, 1995, p . 67.

<sup>9</sup>“ Symbionization ” is a neologism that we form to designate this progressive coming together, this continuous and desired fusion of man with machine with the aim of achieving a new ontological configuration of the human.

<sup>10</sup>A doctor in psychology, Licklider was one of the precursors in linking psychology and technology and a contributor to the birth of the modern computer ( Waldrop , 2001). Very influenced by the work of Norbert Wiener on cybernetics, Licklider will conceptualize the notion of human-technology symbiosis in a landmark article in 1960, which will have a considerable impact.

best of machine, in order to increase the intellectual capacities of humans using simple-to-use interaction systems <sup>11</sup>.

Lamarcko -Darwinian evolutionism and the rise of convergent NBIC technologies.

### III. LAMARCKO -DARWINIAN EVOLUTIONISM

Lamarcko -Darwinian evolutionism which constitutes the material on which Joël de Rosnay built his thought arises in opposition to religious creationism, which supposes a non-scientific and even pseudo-scientific hypothesis which tends to explain the origin of living species by the act of God's creation. It is above all this religious belief which assumes that a divine creation is responsible for life and the universe, contrary to the scientific consensus which supports a rather natural origin by means of evolution <sup>12</sup>. In truth, it is difficult and almost impossible to discuss the theory of the evolution of species without first mentioning this conflict which has kept the leaders of this current of thought on alert: Jean Baptiste Lamarck and Charles Darwin. Furthermore, defining this notion is a ritual to which we must first sacrifice. Thus, by evolutionism, we must understand this theory according to which all living species derive from each other by transformation and by natural transmutation . On this subject, while Lamarckism has designated since 1874 the heredity of acquired characteristics, in other words, a mode of evolution by environmental instruction, Darwinism for its part refers since 1864, essentially to the selective mechanism, it is that is to say the survival and differential reproduction of individuals best adapted to their environment. Indeed, Darwin's theory of evolution by natural selection can be summed up as the idea that the individuals most capable of survive and reproduce transmit the characters responsible for them to their children, which results in the evolution of traits beneficial to the species and not only to the reproducers <sup>13</sup>.

Regarding this evolutionism, Joël de Rosnay is a bit long-winded and step-by-step . Originally [four billion years ago], explains Joël de Rosnay, the atmosphere of planet Earth was composed of methane, ammonia, hydrogen, water vapor, and carbon dioxide. , [simple molecules which lead to the building blocks of life]. During a first stage, these gas molecules recombined with each other under the effect of energy-rich UV radiation coming from the Sun and giving rise to a variety of more complex molecules, such as amino acids . These building blocks of life accumulated in the primitive seas, or better still, in the seabed. It is then that the second stage begins, which consists of the fact that thanks to chemical reactions catalyzed by metals in solution or by clay, these more complex molecules (amino acids, sugars, lipids, nucleotides) associate , grow, proliferate, conduct energy at a distance, self-organize. They create structures capable of closing on themselves and insulating themselves from water, thus constituting an *interior environment* . They are called *eobionts* (from the Greek *Eos* , the goddess of Dawn, and *aion* , “time”, “eternity”) or *probionts* . These are droplets of proteins and lipids, filtering certain molecules present in the environment and concentrating in their internal environment catalysts capable of accelerating reactions.

The third stage sees the beginning of autocatalysis reactions and the emergence of autocatalytic networks , mutually accelerating the stages and cycles of their formation and regulation. Little by little, the rudiments of energy and materials metabolism are built as well as a system for coding and memorizing information in the form of macro molecules (proteins, RNA, then DNA). The probionts become capable of carrying out certain functions of maintenance, duplication of their elements, development and growth. They are the ancestors of algae and primitive bacteria.

The fourth stage is that of the birth of the major functions characteristic of living systems. First, fermentation, which allows primitive organisms to produce energy from substances present in their environment such as sugars. Then photosynthesis, which determines the production of the elements of life from solar energy as well as the massive release of oxygen into the atmosphere. Finally, respiration, thanks to which organisms capable of feeding on plants - or animals having consumed plants - ensure their self-preservation. The divergence between plants (autotrophs) and animals (heterotrophs) is widening and their symbiosis is strengthening.

The fifth stage leads to the birth of cells and multicellular organisms. Evolved cells result from a symbiosis: primitive microorganisms (algae, bacteria) come to live in association with a host guaranteeing their

<sup>11</sup>Éric Brangier , Aude Dufresne, Sonia Hammes-Adelé , “Symbiotic approach to the human-technology relationship: perspectives for computer ergonomics”, *Ergonomics and human-technology symbiosis* , PUF, 2009, p. 339.

<sup>12</sup>Sponville more clearly indicates , “creationism is a doctrine which professes the creation of the world. Any Jewish, Christian or Muslim philosopher would be creationist in this sense, and there would be no reason to reproach him for it. Creationism would be a metaphysical thesis, on which the sciences have nothing to say. » See . André Comte- Sponville , *Philosophical Dictionary* , Puf , Paris, 2001, p. 213.

<sup>13</sup>John Maynard Smith & Eërs SzaThmâry , *The origins of life. From the birth of life to the origin of language* , DUNOD, Paris, 2000, p. 1.

protection and to which they provide energy production plants and locomotion engines. Symbionomic evolution continues with an important innovation of nature: the integration of individual cells into multicellular organisms made up of thousands, then billions of individuals, exercising different but complementary “jobs”.

It should be noted that evolution under the rule of nature is extremely slow; This is why Joël de Rosnay celebrates with pomp the arrival of the computer, which constitutes, so to speak, a catalyst and a necessary tool for mastering complexity, which truly constitutes “the key to the future”<sup>14</sup>.

As much as evolutionism allows us to situate ourselves in the passage from microorganisms to man, the meteoric rise of NBICs will allow us to understand all the modifications which have gradually littered the universe from man-machine fusion to the effect to truly build the symbiotic man.

#### IV. THE RISE OF CONVERGED NBIC TECHNOLOGIES

Founded from the beginning, on an irreconcilable partition which held science and technology back to back, technological dynamics today serve as a most united and fruitful marriage. Indeed, the science and technology trajectory, if it is today at its peak, is punctuated by four major moments including ancient science, characterized by the dichotomy between science and technology [Plato, Aristotle], medieval science, characterized by a strong desire to perpetuate the ancient theoretical tradition but with the beginnings of perceptible technicality [Bertrand Gille, Raymond Lulle], modern science characterized by a resolutely operative and manipulative mutation due to the introduction of mathematics and experimentation respectively by René Descartes and Claude Bernard, and contemporary science which should be called “technoscience” because it truly marks the marriage, better still, the fusion between science and technology.

It is to this contemporary science characterized by an inseparability between science and technology that we owe the postulate of the Rosnayan symbiotic man<sup>15</sup>. Indeed, the futurist seeing the interweaving of divergent fields such as Nanotechnology, Biotechnology, Computer Science and Cognitive Sciences, believes that from this mixing will inevitably emerge a type of new man to whom we must give a rather warm welcome.

For barely thirty years, the rise of rational biotechnologies resulting from the discovery of DNA and the means of reprogramming it has been on the verge of disrupting man, his environment and biological evolution as a whole. New co-evolutions are beginning, notably between the biological and the mechanical, the biological and the electronic. In thirty years, man's capacity to manipulate living things has made such a leap that the knowledge of biologists is transformed into planetary power.<sup>16</sup>

Furthermore, this exponential development of biotechnologies and biomedicine opens the floodgates to new ideologies such as transhumanism, posthumanism and abhumanism which come together to define a new configuration of man. Whatever the case, a major postulate fuels Joël de Rosnay's work on this subject and he shares this postulate with the slayers of trans/post/abhumanist ideologies; it is that man in his current configuration has an approximate and rudimentary biophysical and biospiritual potential; only its confidence in contemporary technoscience can allow it to access the higher stage of its constitution and therefore, the next stage of its evolution. It follows that directly, the symbiotic man would be the product of the NBIC technological convergence because

<sup>14</sup>At the end of the 20th century, we are experiencing a real shock of the future firsthand. It mainly results from progress in physical and biological sciences over the last thirty years. Physics and electronics led to the development of computing and communication techniques. Biology, biotechnologies and bio-industry. Certainly humanity has already experienced such historical transitions. The agricultural revolution took place over several millennia. The industrial revolution lasted more than a century. We are now entering the information and communication revolution which should take place within a few decades. These developments lead to an increase in the complexity of society and the organizations, systems and networks for which we are responsible. A complexity that challenges our traditional methods of analysis and action. Cf. *The symbiotic man, op.cit.*, p. 27.

<sup>15</sup>The highlighting of this technological convergence, which is preponderant in the progressive construction of symbiotic man, is made by Joël de Rosnay in these terms: “Technological evolution, born from the convergence of these scientific disciplines, leads to new so-called “intelligent” materials: implantable chips capable of treating numerous metabolic disorders (artificial retina, artificial hearing, insulin pump, cardiac simulators or defibrillators), biochips, intended for biochemical and medical tests or molecular machines capable of executing numerous functions. In addition, nanotechnologies open up new worlds of manufacturing miniaturized parts that can be used in diagnostic systems or implantable devices. Thus, nanolaboratories can analyze more than five hundred thousand new molecules per day in parallel. See Joël de Rosnay, 2020: *Future scenarios. Understanding the World to Come*, Ideas and Men, Paris, 2007, p. 164.

<sup>16</sup>Joël de Rosnay, *The symbiotic man, op.cit.*, p. 74.

these new sciences carry the engineering necessary to manipulate the genetic heritage of man at will for the purposes of repair, transformation and or increase of its biophysical capacities. It is for this reason that Oleg Curbatov and Louyot-Gallicher Marie believe that

Advances in science, engineering and technology have permeated almost every aspect of the individual's life today and contribute to the development of their professional and everyday knowledge and skills. These have become the keys to solving many of the current and future challenges in professional and private fields <sup>17</sup>.

The least we can say is that in the 2000s, the convergence of nanotechnologies, biotechnologies, and information and cognitive technologies (NBIC) led, through a systemic approach, to fundamental tools horizontally integrated and vertically in various multi-sector emerging technologies. All this combines to place man in a “vortex of hope” of perfecting his being <sup>18</sup>. But should we really hope?

## V. THE SYMBIOTIC MAN IN THE WAKE OF TRANS /POST/ABHUMANIST MOVEMENTS

Although similarities are perceptible between transhumanism and posthumanism, for greater clarity, it is appropriate to define them clearly and distinctly in order to dispel any misunderstandings. Thus, transhumanism is an ideology that emerged in the 1950s under the leadership of Julian Huxley, the brother of Aldous Huxley, author of the famous work *Brave New World*. It is an ideological movement that advocates biological or material self-transcendence of the human species through biomedical technologies <sup>19</sup>. Finding this transhumanist movement invasive, restrictive and omnipresent, Olivier Rey indicates that:

This is our lot: to live in a world where certain men, in a hurry and jealously, want humans to make way for more efficient beings. And everyone finds themselves caught up in this mess, willy-nilly. No doubt there are many of us who would prefer to stay at the dock. But, enlisted by force, we cannot treat the coming storms with contempt. It is not out of joy that we are concerned about transhumanism, we are forced to do so. Besides the fact that the transhumanist question is not pleasant, it is difficult to address, because of its multiple aspects: economic, sociological, psychological, philosophical. Each time attention is focused on one of the aspects, we run the risk of losing sight of or, at the very least, downplaying the other, no less important, aspects <sup>20</sup>.

The Rosnayan symbiotic man, because he precisely reflects a revolt in relation to the characteristics of current man, confirms his closeness to the transhuman. The flourishing of symbiotic man also depends on his ability to intervene promptly and without mishap in the face of the vicissitudes that beset him. From this point of view, we can say that there is in Joël de Rosnay a very clear desire to establish ourselves, through the good care of biomedical technologies, as augmented beings, in short as beings with characteristics beyond those of current humans.

**Post humanism** as for him, is a movement that took shape towards the end of the 90s, beginning of the 2000s, through computer engineers of American origin. Its tone, which carries theological presuppositions, is particularly enthusiastic, optimistic and vaticinary, because its protagonists strongly aspire to “a future humanity abandoned from its carnal limits, delivered from death accessing an eternity” <sup>21</sup>. As we can see, a gap is clearly perceptible between these two movements: the first developing in the wake of biotechnologies and biomedical sciences, while the second prospers within robotics, artificial intelligence, IT, cybernetics. cognitive sciences.

Under the pen of Joël de Rosnay, these movements are accelerators of human evolution to the extent that “Darwinian evolution by mutation and natural selection can be spread over thousands, tens of thousands, even

<sup>17</sup>Oleg Curbatov & Louyot-Gallicher Marie, “NBIC (nano-bio-info-cognitive) convergence and Knowledge Marketing: experimental fields of application. Example from the biomedical field. » International Marketing Trends Conference, ESCP Europe - Ca Foscari University, Venice, Italy, Jan 2016, p. 6.

<sup>18</sup>It is from this perspective that André Liboire Tsala Mbani clearly says that “certain parents, to realize their narcissistic and immoral fantasies, not without the complicity of biologists and geneticists driven by the axiomatics of interest, aim to produce offspring that are identical to their image and their psychology [...], in defiance of the principle of autonomy and [of] individual freedom.” See . André Liboire Tsala Mbani, *Biotechnologies and human nature: towards ontological terrorism ?*, Paris, L'Harmattan, 2007, p. 37.

<sup>19</sup>André Liboire Tsala Mbani, *Gilbert Hottois and human ontology. Reflections on a bioethicist's torn between humanism and anti-humanism*, L'Harmattan, Paris, 2020, p. 182.

<sup>20</sup>Olivier Rey, *Lure and misfortune of transhumanism*, Desclée de Brouwer, Paris, 2020, p. 6.

<sup>21</sup>Gilbert Hottois, *Is transhumanism humanism?* Belgium, Royal Academy, 2014, p. 33.

millions of years, while the exponential evolution of robots and AI is annual, or even monthly <sup>22</sup>. Furthermore, the distinction between these two movements of thought is quite well understood by Joël Meli Silatsa and Robert Fotsing Mangoua when they specify that:

Transhumanism and posthumanism are two postmodern ideologies. If the first stipulates that man's accomplishment requires the biotechnological multiplication of his genetic potential, the second, for its part, advocates for the connection of man's mental or cervical faculties to computing, so as to obtain what Joël de Rosnay calls "the symbiotic man" <sup>23</sup>.

It follows that if in transhumanism we still have to deal with man, although his biophysical potential is increased tenfold, posthumanism no longer reflects a simple overcoming, but a negation of man. In fact, posthumanists propel us into a new species, notably the technical species. We see that the symbiotic man in that he translates the man who houses in his body a techno-bio-digital apparatus also testifies to the proximity of the futurist with posthumanism <sup>24</sup>. In truth, in accordance with the Darwinian logic of which Joël de Rosnay and some others are followers, it is clear that there is no immutable, immutable and intangible human nature, far from it, man is a vulgar being the result of an evolutionary or evolutionary process, entirely contingent, hazardous and random. It follows, as André Liboire rightly observes, Tsala Mbani that "its biophysical and biospiritual potential, to say the least approximate, corresponds to a phase of evolution of species among many others. This means that humans in their current configuration do not constitute the entelechy and eschatological phase of the evolution of species" <sup>25</sup>.

Abhumanism, for its part, is considered to be a much less frequently used concept, as are transhumanism and posthumanism. Its main slayer is Jacques Audibert in particular who lays the foundations in an article entitled "From the human to the abhuman" <sup>26</sup>, before making a greater analysis in a work with the very evocative title: *Abhumanism* <sup>27</sup>. In "abhuman", the prefix "ab" means "distance". It follows that "abhuman" designates that which moves away from or does not agree with the classic humanist vision, but which must nevertheless be integrated, in this case the "scientific description of the world which includes man in distinguishing any ontological distinction, any election thereof within the universe" <sup>28</sup>. Abhumanism therefore removes man from his pedestal as the center of the universe by diminishing and diminishing his eminence, his predominance and his excellence. As André Liboire indicates Tsala Mbani,

The abhumanist posture thus manifested is part of the postmodernist logic, which attacks one of the pillars of modern thought of the 7th and 8th centuries: that which establishes the human being as the center of the world, the principle of all universally shared moral, ethical and political values; which are guarantors of harmonious and therefore fulfilling living together for all in the political community <sup>29</sup>

Connections and connections are also perceptible between this abhumanism and anti-speciesism <sup>30</sup>, so much so that the two ideologies promote the non-existence of a hierarchy between the beings who populate the

<sup>22</sup>Joël de Rosnay, *I seek to understand, the hidden codes of nature*, Les Liens qui Libération, Paris 2016, p. 101.

<sup>23</sup>Joël Meli Silatsa & Robert Fotsing Mangoua "Technological growth as a support for post/ transhumanity in AquaTM (2012) by Jean-Marc Ligny", Revu Romaine d'études francophone, n°12, *Hybridité et métamorphose*, 2020, p. 2.

<sup>24</sup>Joël de Rosnay does not hesitate to specify that "One of the keys to the future will consist of man relying on the scientific approach to better understand where he comes from and what his evolution could be. And not just from the traditional rules of politics, the market or religion. He will also need to understand how complexity has evolved, from the origin of life to the present day." Cf. Joël de Rosnay, "Towards man-machine fusion. A web in symbiosis with our brain and our body" De Boeck Supérieur, *Sociétés*, n° 129, 2015, p. 46.

<sup>25</sup>André Liboire Tsala Mbani, *Gilbert Hottois and human ontology*, p. 204

<sup>26</sup>Jacques Audibert, "From the human to the abhuman", in *New aspects of a modern myth*, thematic issue of Cahiers du Sud, June 1995.

<sup>27</sup>Jacques Audibert, *Abhumanism*, Paris, Gallimard, 1955.

<sup>28</sup>Gilbert Hottois and JN Missa, *Encyclopedia of Bioethics, Medicine, environment, Biotechnology*, Brussels, Editions De Boeck University, 2001. Quoted by Tsala Mbani, *Gilbert Hottois and human ontology, op.cit.*, p. 185.

<sup>29</sup>André Liboire Tsala Mbani, *Gilbert Hottois and human ontology ... op.cit.*, p. 185.

<sup>30</sup>Movement arguing that the species, in itself, should not determine the treatment of an individual in society and which denounces and condemns in particular the exploitation and mistreatment inflicted by humans on the rest of animals. It is above all this current of philosophical and moral thought formalized in 1970 by thinkers like Richard.

universe. It follows that the human being is only one common being among many others. Essentially, it is a question of validating the idea that man loses his former preeminent position as the center of the universe, in order to allow other descendants, such as trans /post / abhumans to see the day. “The descendants of man can be considered as beings distant, deviant and inferior to man, if we place ourselves in the perspective of purist humanism; are then like distant beings of course, but, a distance which translates superiority vis-à-vis man: this is the evolutionary perspective or of evolutionary humanism <sup>31</sup>.

Abhumans therefore reconcile both transhumans and posthumans, in the sense that they consider them purely and simply as descendants of men, whose advent is driven by anthropotechnical dynamics, or better, by the technical kingdom . But the whole question remains and is even more pressing given the speed of progress in this area: Is a living being made of spare parts, and therefore carrying within it technological equipment, still a human being? Are we demonstrating humanism when we subscribe to modifications of man's genetic heritage with the aim of connecting him internally and externally to machines? We will remember that Joël de Rosnay's effort in his postulate of the symbiotic man would have been to answer this question in the affirmative , that hyperhumanism or evolutionary humanism is a true humanism.

## VI. ETHICO-HUMANIST CONTROVERSIES SURROUNDING THE CONSTRUCTION OF A SYMBIOTIC HUMANITY IN JOËL DE ROSNAY

It is by positioning himself on a prospective posture that Joël de Rosnay put forward the hypothesis that the human of tomorrow will be a symbiotic man, that is to say that man whose biological constitution benefits in a fusional way from the company of technological equipment. It is therefore important to understand the implications of such a “ symbionization ” project which, as we see, revolutionizes the conception of humans although it is in direct line with the evolutionary position of Charles Darwin.

### THE ROSNAYEN SYMBIOTIC MAN: A PURE PRODUCT OF EVOLUTIONARY HUMANISM

In the history of philosophy, humanism positions itself as the most ambitious project for the defense of man and his interests. It designates this doctrine which affirms the value of the human person and seeks their optimal development. In the opinion of Charles Brunold , humanism refers to this “doctrine which establishes the happy development of man as the supreme end, denounces that which enslaves or degrades him and seeks to promote a state of affairs where will be preserved his freedom, his security and his dignity <sup>32</sup>. In any case, this is in a holistic manner what is retained as a definition by the fathers of this doctrine who are Erasmus, Budé, Pic de la Mirandola, Charles Montaigne and several others. They are unanimous on the fact that there exists a human nature, which is immutable, immutable and intangible. Furthermore, man is endowed with two-dimensionality , he is made up of a body [ *soma* ] and a spirit [ *psychè* ]; moreover, particular emphasis is placed on its spiritual accomplishment, which constitutes, so to speak, its true essence. This accomplishment inevitably occurs through symbolic means such as education and culture.

Evolutionary humanism, for its part, fundamentally defended by Gilbert Simondon , Gilbert Hottis, Jean Michel Besnier and Joël de Rosnay, refers to this doctrine which is based on Darwinian logic to defend the inexistence of an intangible and immutable human nature and who consequently thinks of man's accomplishment exclusively on the material plane. The leading argument here is precisely that the human being in his current configuration does not correspond to the paroxysmal, entelechy and eschatological phase of the evolution of species, even if it means trusting technological and especially biotechnological advances. to perfect one's being. As we can see, evolutionary humanism conceives of man as a random and contingent being, randomly resulting from evolutionary or evolutionary processes and whose guarantee of his development is held by emerging technologies.

By establishing “symbiotic man”, this hybrid man, made of flesh and technological apparatus, as an archetypal model towards which we must strive, Joël de Rosnay constitutes, following Gilbert Simondon, Gilbert Hottis and Jean <sup>33</sup>Michel Besnier, the one of the thurifers of this resolutely antihumanist movement. Indeed, Rosnay's symbiotic man, in that he is only thought of under the prism of his materiality, which materiality is also

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D. Ryder and Peter Singer and which specifies that the species to which an animal belongs is not a relevant criterion for deciding how we should treat it and the moral consideration we should give it.

<sup>31</sup>André Liboire Tsala Mbani , *Gilbert Hottis and human ontology ... op.cit .*, p. 185.

<sup>32</sup>Ch. Brunold , *Contemporary thought* , Eugene Belin, Paris, 1970, p. 10.

<sup>33</sup>Particularly in its second euristic life

in tight fusion with a mechanical apparatus, appears a posteriori as a "being without interiority". This is why we rightly qualify him as a cyborg, or mutant.

In truth, this doctrine that Joël de Rosnay and his acolytes defend and which they assimilate to humanism constitutes rather a deviation, better, a deviation from the very notion of humanism as conceived by the fathers of this doctrine. It is a relativization, an expansion and a flexibilisation of classical humanism in order to make it correspond to disproportionate proportions. Clearly, evolutionary humanism is antihumanism, no more than transhumanism, posthumanism and abhumanism. These ideologies not only oust God's act of creation<sup>34</sup>, denying at the same time any nature that would be intrinsically, generically and ontologically linked to it, but also integrate into humanism that which is not human, notably "technical beings". » or "biosynthetic beings". All things being equal, Joël de Rosnay and his epigones only conceive of humans as matter, which obviously leaves man open to all scientific manipulations, thereby giving credence to all related economic desires. As Joël de Rosnay writes,

The evolution of relations between man and the life sciences can be considered in four main phases: the transition from a "descriptive" biology [based on the classification of species] to an "explanatory" biology following the growth of molecular biology. Then "transformative" thanks to genetic engineering and biotechnologies. And finally, now an "involving" biology which, benefiting from progress in genomics, leads man to become subject and object of his own experiences<sup>35</sup>.

In any case, the Rosnayan symbiotic man is the product of evolutionary humanism, that is to say of the belief in the idea of an insufficiency, better, of an approximation of bio- spiritual data of man and the conviction that only biotechnological developments can get us out of this "slump". Obviously, this conception of humanism constitutes, so to speak, a deviation from classical humanism. Indeed, classical humanism, it must be remembered, is this current of thought which saw the light of day and experienced its rise during the Renaissance and whose primary vocation is to develop and structure, on the basis of the Greco-humanities ancient Romans, a new anthropological paradigm based "on the promotion of man as he participates in the divine"<sup>36</sup> and is the depositary of a dignity and a rational excellence guaranteeing his preponderance, his eminence, his transcendence and his superiority over other divine creatures. It follows that classical humanism advocates for the promotion and fulfillment of man's virtual humanity through purely symbolic means. However, humanism as perceived by the futurist and which translates into the postulate of the symbiotic man moves considerably away from these noble traditional and universalist objectives.

Moreover, its conception is more in line with the relativist ideologies of trans /post/abhumanists which not only reduce man to his material dimension alone, but above all only postulate his improvement on the biophysical level. From this point of view, the Rosnayan symbiotic man who *de facto* corresponds to a surpassing of the human is to be deconstructed, or better, to be held in low esteem because he undoubtedly constitutes a departure for the realization of the virtual humanity of man. To give it a warm welcome is to subscribe to our own cyborgization, it is to accredit our mutation for another being, better, for a new species, notably the technical or biosynthetic species.

In the promotion of symbiotic man, there is a possibility [and perhaps a desire] to make the human species disappear on the altar of the technical species. Joël de Rosnay, because he places symbiotic man in a continuity of Darwinian evolutionism, [which is now deployed on the technological and no longer natural prism], participates in this post-humanist project of self- evacuation of the human outside of himself. He thereby demonstrates his adherence to evolutionary humanism, because it denies the existence of human nature. As Tsala indicates Mbani, if we consider the configuration of human ontology as dualistic, that is to say made up of a body and a mind, as we defined it earlier, then it is this double material aspect and spiritual which is in the crosshairs of anthropotechnics, in the sense of deconstruction-reconstruction, since it is a question of mutating humans on a

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<sup>34</sup>Only the evolutionary thesis seems credible to them. The human being is not a creature of God, he is the result of a long contingent evolution of species whose primordial or primitive ancestor is the unicellular being and the most immediate being, the chimpanzee. From this point of view, the human being is not the entelechy stage of the evolution of species, he constitutes an intermediate stage. For this, taking into account the imperfections which are its own, it is plausible and permissible that entropo - technique can envisage its biophysical, cognitive, emotional and moral mutation, even its symbiotic connections between the higher faculties and the cybernetic elements in the framework of trans /post/abhumanism. See André Liboire Tsala Mbani, *Gilbert Hottois and human ontology*, *op.cit.*, p. 173.

<sup>35</sup>Joël de Rosnay, 2020: *Future scenarios. Understanding the World to Come*, Ideas and Men, Paris, 2007, p. 163.

<sup>36</sup>Lucien Ayissi, "philosophy of development and ethics of excellence at Ebénézer Njoh-Mouellé", in *Philosophes du Cameroun*, Yaoundé Presses Universitaire de Yaoundé, 2006, p. 99.



biophysical, cognitive, emotional and moral level. There is therefore a reset of the criterionological reference of the generic essence of the human species; and with this questioning of the ontological dualism of the human species, we are no longer in humanism as desired by the fathers of this doctrine. From then on, we inevitably and indisputably sink into anti-humanism. More precisely, writes the Cameroonian philosopher,

For the purists of classical humanism, it is unthinkable that we could expand and make the notion of humanism more flexible to the point of making it a portmanteau notion where we can put everything that comes and integrate everything, including the mutation and biophysical rearrangements of man, even at the risk of completely altering and alienating the essence of the notion of humanism. Enough to make Michel Montaigne and Pic de la Mirandole return to their graves!<sup>37</sup>

In reality, the Rosnayan symbiotic man project corresponds to “auto-eugenics”, which disregards human dignity by giving no credit to the dualistic aspect of the human. All that matters is its biotechnologically modifiable, fakeable and falsifiable material dimension. However, we have known since Plato that the body is only a tomb for the soul. This added value given to the body to the detriment of the mind, which is considered contemptible and even non-existent, truly corresponds to a negation of integrity and human dignity. It follows that,

In accordance with the Darwinian logic of which they are followers, there is no immutable and intangible human nature, since there is nothing to create one, man is a common being resulting from an evolutionary or evolutionary process, entirely contingent, hazardous and random. Better still, its biophysical and biospiritual potential, to say the least approximate, corresponds to a phase of evolution of species among many others. This means that humans in their current configuration do not constitute the entelechy and eschatological phase of the evolution of species<sup>38</sup>.

Is a hybrid and composite being, half-man, half-machine, a being who shares its biophysical constitution with a techno-mechanical apparatus still a man? Doesn't the man/machine fusion thus advocated by Joël de Rosnay clearly reflect the cyborg, defined by the author himself as a being whose biology has become mechanized and mechanics biologized<sup>39</sup>?

## THE ROSNAYAN SYMBIOTIC MAN: A CYBORG?

The concept of “cyborg” invented in 1960 by Manfred Clynes and Nathan Kline when they imagined a being that could survive in alien and hostile environments is the contraction of “cybernetic organism”. It designates an “autonomous being, mixed human and mechanical, symbol of this indifférentiation between man and machine which haunts our imagination”<sup>40</sup>. This is to be distinguished from the robot, which is an entirely artificial and mimetic “being”, even repetitive, whereas the cyborg is the result of a fusion between man and machine. Joël de Rosnay also likens the cyborg to a “man-robot”, that is to say a human being whose biology has been mechanized and the mechanics biologized.

We must undoubtedly take Joël de Rosnay literally when he defines symbiotic man as being the product of the man/machine fusion<sup>41</sup> and establishes him as the paradigmatic human variety of the third millennium. But who, against all expectations, seems to refuse that the symbiotic man is a cyborg. So what would be its true nature? If it really isn't the cyborg, let's admit that it looks strangely like one. In truth, the characteristics that the Rosnayan symbiotic man carries and the author's tendency to turn away from any assimilation of him to the cyborg force us to perceive some shades of hypocrisy. Furthermore, Joël de Rosnay succinctly provides a good range of definitions of the notions of cyborg, mutant, bionics, which definitions contribute to a better understanding of this position of cyborgization that the futurist subsequently denies.

Schematically, he writes, we can consider that there are two visions of the man of the future. One close to science fiction, which I do not subscribe to, and the other which is closer to a “humanist technologist” approach, with which I feel more comfortable. The first vision almost always leads to the “mutant”, the “cyborg” or the “bionic man”. The mutant is a living being which is modified by biological

<sup>37</sup> André Liboire Tsala Mbani, *Gilbert Hottos and human ontology*, pp. 204-205

<sup>38</sup> *Ibid.*, p. 204

<sup>39</sup> Joël de Rosnay, *2020: Future scenarios. op.cit.*, p. 270

<sup>40</sup> Franck Damour, “Is the cyborg our future? », *SER, Society*, Paris, November 2009, p. 4.

<sup>41</sup> This is exactly the definition given by Joël de Rosnay in *The Symbiotic Man* (1995), in *2020: Les Scenarios du Futur* (2007), and in *And Man Created Life* (2010).

mutations. The cyborg, a robot man or a human being whose biology has been mechanized and the mechanics “biologized”. And the bionic man, a being who integrates bionic parts replacing or augmenting deficient functions. My personal vision is based on a co-evolution of man and society. I call it an anthropotechnico -societal evolution. Which means that the transformation of man seems to me inseparable from his integration into society which, itself, transforms him in return.<sup>42</sup>

In the same vein, André Liboire Tsala Mbani , interested in this phenomenon of mechanization of the human species, pinpoints the term “biotic”<sup>43</sup>, which he defines as “an integration of cybernetic elements and higher, specifically human faculties with a view to giving birth to the cybernanthrope ”<sup>44</sup>. This connection of man to computing then leads to the creation of an augmented human species, resulting from a symbiosis, which falls into the category of so-called posthuman species and obviously not human. *Ultimately* , by defining “symbiotic man” as one who shares his biophysical heritage with technological equipment, Joël de Rosnay urges us to assimilate him in any state of rationality and in all logic as a cyborg.

Furthermore, even if it must be recognized that technical prowess in terms of bionic arm, exo-skeleton , *pace makers* , implant , *etc.*<sup>45</sup> proliferate more in science fiction, [which moreover confirms the prospective character of Joël de Rosnay], it remains that by symbiotic man, Joël de Rosnay truly means this man who goes beyond the prosthetic, to share an important part of his body with mechanics. This is when all doubts are dispelled and we confirm that the Rosnay symbiotic man is basically a cyborg or a mutant.

However, in the works of the author of *The Symbiotic Man* , we notice a less frequent use of the concept of cyborg. He is more tempted by the term “bionics”, which translates the study of biological systems to construct non-biological equivalents (electronic and mechanical). The bionic man would therefore be this living being which integrates bioelectronic parts replacing or augmenting deficient functions<sup>46</sup>. Everything suggests that only the degree of penetration of technical objects into the body determines the “ cyborgization ” or “ bionization ” of a being.

The boundaries between the biological, the mechanical and the electronic are blurring. Researchers have implanted a chip in their arm to communicate with their environment and be recognized by security systems. [...] Other researchers are working on “neurochips ” directly connectable to areas of the brain such as the hippocampus, offering new hope for people who have suffered serious head trauma following accidents<sup>47</sup>.

We see that in Joël de Rosnay there would be a hiatus between the bionic man and the cyborg. This gap truly lies in the degree of technologization /mechanization of our being. A bionic man is one who wears a prosthesis or an implant, adopted to compensate for any deficit<sup>48</sup> and whose predominance of his biological foundations is always guaranteed. At the same time, a cyborg is that man whose mix between the biological and the mechanical is fundamentally established; and we will even say that and whose mechanical pole tends to phagocytose the biological pole. It is this difference that Jérôme Goffette attempts to establish in these terms:

While the idea of the cyborg is that of a problematic collage between two parts, mechanical and organic, placed on an identical plane, the idea of the prosthesis does not follow such a pattern of confrontation,

<sup>42</sup>Joël de Rosnay, “Towards man-machine fusion. A web in symbiosis with our brain and our body” De Boeck Supérieur, *Sociétés* , n° 129, 2015, p. 42.

<sup>43</sup>For Joël de Rosnay, it designates this new science which results from the marriage of biology and computer science. It is mainly applied to creating interconnections between the human brain and computers. *See . 2020: the scenarios of fur op.cit .* , p. 266.

<sup>44</sup>André Liboire Tsala Mbani , *Biotechnologies and human nature: towards ontological terrorism ?* , Paris, l'Harmattan , 2007, p. 12-13.

<sup>45</sup>“Glasses, novelty contact lenses, pace-makers , dentures, hearing aids, breast implants, *Neurowear* cat ears , mechatronic arms, etc. : our contemporary world immerses us more and more in a world of prostheses, to the point that, as we age, few of us escape it. This hybridization goes almost unnoticed even though it changes our lives and our daily lives.” These additions are provided by Jérôme Goffette , in *Science fiction, prostheses and cyborgs* , Books on Demand , Paris, 2019, p. 1.

<sup>46</sup>Joël de Rosnay, *2020: Future scenarios. op.cit.* , p. 265.

<sup>47</sup>*Ibid .* , p. 211.

<sup>48</sup>We can say in this respect that the athlete Oscar Pistorius is a bionic man because the prosthesis he wears to replace his leg lost during a traffic accident certainly represents a profound mechanization but the biological dimension is still predominant.

because the human core remains primary. and main. The prosthesis, at least initially, is added to this core as a complement. The notion of prosthesis, which is quite broad, therefore allows for a great wealth of variations. In its material, the prosthesis can be organic, mechanical or even virtual. In its purposes or functions, it can be motor, sensory, expressive, interfacial , cognitive, etc. In its scope, it can be limited to a simple piece of jewelry or, on the contrary, replace the body or encompass it. In its human meaning, it may represent only an accessory, or even negligible, function, or be a symbolic key or a leading social element. Make no mistake, even if the figure of the cyborg shines brightly in science fiction, the place of prostheses is just as important, and is the subject of a myriad of variations.<sup>49</sup>

Moreover, the Cyborg, as an alliance of the organic and the inorganic, as an association of the biological and the mechanical , as an interweaving of the human and the non-human, systematically corresponds to the figure of the symbiotic man as described by Joël de Rosnay. In our opinion, this symbiotic man and now this cyborg stands a thousand miles from the true human because it is technodetermined . It is rather a “funny man/machine”, perhaps with a human morphology, but devoid of generic essence and properly human ontology. A true biosynthetic being undoubtedly ready to transform into Frankenstein's monster, Big Brother or Golem.

## VII. CONCLUSION

In order to understand the nature of the “symbiotic man” mentioned by Joël de Rosnay, it emerges that this refers not only to a man who shares his biophysical heritage with sophisticated equipment, but above all reflects the extraordinariness of technological advances of our time and times to come. Born therefore from a desire to surpass oneself, to be more efficient in all things, the Rosnayan symbiotic man would be the culmination of an evolutionism which turns away from the mysteries of nature to form an alliance with the biotechnologies of such as genetic engineering and synthetic biology. This “symbiotic man” as he is half-man, half-machine, systematically moves away from the true human and constitutes in our eyes a cyborg or a mutant. The crux of the problem, as we well suspect, is the attack on the ontological heritage of the human being, a heritage which must nevertheless be perceived, in any state of rationality, as a good sacred, immutable, intangible and preservable above all else. It is for this reason that we condemn this “ symbionization ” or this “ cyborgization ”, not without campaigning for the preservation of humanity, in the sense that the word has always taken over the centuries.

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