TECHNO-UTOPIAS: VIRTUAL AND UTOPIAN SPACES IN LITERATURE
FROM THE INDUSTRIAL REVOLUTION TO THE COMPUTER REVOLUTION
ABSTRACT:

This dissertation analyzes the concept of techno-utopias, defined as ideal communities revolving around science and situated in the future. I argue that the faith in science typical of the Industrial Revolution produced a new form of utopia, which led to the representation of virtual spaces in twentieth-century literature and media. From the telegraph to the microcomputer, the dream of machines invaded industrial countries, such as France and the United States. This study examines the fascination with technology present in Villiers’s Ève Future (1886), Zola’s Travail (1901), Marinetti’s manifestos (1909-1924), press articles written by the actors of the Computer Revolution, and Spike Jonze’s film, Her (2013). This work engages with a rich array of theoretical perspectives drawing from various academic disciplines including literature, history of technology, media studies, and philosophy.
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A DISSERTATION
SUBMITTED ON THE FIRST DAY OF JUNE 2015
TO THE DEPARTMENT OF FRENCH
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
OF THE SCHOOL OF LIBERAL ARTS
OF TULANE UNIVERSITY
FOR THE DEGREE
OF
DOCTOR OF PHILOSOPHY
BY ELSA STÉPHAN
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INTRODUCTION
Introduction

“The essence of technology is not itself something technological.” Martin Heidegger

To be understood, technology often needs to be analyzed from a non-technological perspective. Through the twentieth century, numerous disciplines such as economics, psychology or sociology have examined our relationship to technology, reflecting its growing impact on our lives. The use of smartphones and social networks has given birth to numerous scholarly papers, leading to the creation of a new critical vocabulary. Among other debates, our attention to technology has triggered a high number of publications on the “economy of attention.” Our difficulty to pay attention to reality exemplifies one of the side effects of our fascination by the virtual worlds in which we escape. Whether we create an avatar on Second Life, play online games, or simply use the Internet, we are part of virtual communities. But beyond the use of these tools, the signs of technology also need to be examined. To Heidegger, in his 1954 essay “The Question Concerning Technology”, the impact of technology goes beyond science and machines to englobe art, culture, all types of discourse; human interactions as well as human relationships to objects. Indeed, from allegorical representations of science at the World Fairs through statues and iconography to the globe of Wikipedia’s logo, our relationship to technology is illustrated by multiple symbols. While walking through the Universal Exhibitions of the Fin de Siècle, one could admire the modern cathedrals made of steel and glass and devoted to technology such as the “galerie des machines” in 1900 or the statues of the

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A semiotic analysis of these representations is necessary for us to fully grasp our relationship to machines from the Industrial Revolution until today.

Going against the doxa of modern thought which would hermetically separate art and science, I argue that art and literature are indispensable to the history of technology and vice versa. It is true that already in 1852, the French novelist Gustave Flaubert anticipated the coming together of art and science, at the very moment when science became a source of new dreams, and machines entered into literary creation: “The more art develops, the more scientific it will be, just as science will become artistic. Separated in their early stages the two will become one again when they both reach their culmination.”

The middle of the nineteenth century does not only mark a political change with the aftermath of the Revolution of 1848 in Europe but also marks the height of another major transformation: the Industrial Revolution. Thanks to technological progress, it was during the 1850’s that the world economy was the most prosperous. According to economist Myriam Levy-Leboyer, French industrial production was multiplied by two and exportations by 2.6 during that decade due to steam engines. During that same decade, the economic prosperity stimulated the “railway mania”, the creation of new banks, the invention of the rotary printing press, the boom in the production of steel and coal, and the development of the electric telegraph.

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3 At the turn of the century, the French commonly referred to electricity as la fée électricité.
Science and technology invaded so many aspects of people’s lives that it impacted literature, advertising, painting and all forms of art. As expressed by Flaubert, art became scientific and science became artistic. Machines, in particular, had suddenly burst into the metropolitan and pastoral landscapes: trains in Monet’s *La Gare Saint-Lazare*, the statue of electricity at the Paris World Fairs of 1900, the electric lightbulbs and the telephones on Jules Cheret’s advertising posters. Literary scholar Claude Pichois goes so far as to draw a parallel between the first World’s Fair in 1851 and the publication of *Les Chants Modernes*\(^8\) in 1855, which was the first collection of poems that not only focused exclusively on science and technology but also included an ode to technology, reflecting its influence on literature\(^9\).

In the nineteenth century, literature and science started to overlap in an unprecedented way. Science invaded all sorts of discourse from novels to political speeches. Many novelists were fascinated by science and its advances in the practice of dissection, experimental science and vaccination and in the understanding of phenomena such as reproduction and evolution. Indeed, a parallel can be drawn between the history of science and the multiplication of scientific novels in France in the nineteenth century. The first railway network was created in France in the 1840’s. Darwin’s *the origin of species* was published in 1859 and his ideas were immediately adopted by Ernest Renan. As a consequence, machines and scientific experiments were not only themes that inspired writers but scientific methods were also influencing literature as a whole. As analyzed by Michel Foucault, Naturalism and Realism are often considered to be “scientific” in the sense that they “dissect” society

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the same way that scientists were dissecting corpses. Balzac is said to “dissect like an anatomist.” As for Zola, leader of Naturalism, he applied experimental medicine to literature and considered the scientist Claude Bernard, the founder of this method, as a mentor:

Dès ce jour, la science entre donc dans notre domaine, à nous romanciers, qui sommes à cette heure des analystes de l’homme, dans son action individuelle et sociale. Nous continuons, par nos observations et nos expériences, la besogne du physiologiste, qui a continué celle du physicien et du chimiste [...] Le roman expérimental est une conséquence de l’évolution scientifique du siècle. On entrera dans un siècle où l’homme tout-puissant aura asservie la nature et utilisera ses lois pour faire régner sur cette terre la plus grande somme de justice et de liberté possible. Il n’y pas de but plus noble, plus haut, plus grand.

As expressed by Zola, science opens the door to endless possibilities, including the creation of a world that would contain more justice and freedom.

In this thesis, I claim that politics is no longer a channel for utopian hopes after the 1848 Revolutions in France and Europe. Indeed, I suggest that the simultaneous loss of political hope and increasing advances in technology mark a major shift in the history of utopias following the Industrial Revolution and the failure of the Revolution of 1848 and the Paris Commune of 1871. The argument at the heart of this thesis is the following: technology has been a new vector of utopias, from the middle of the

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nineteenth century until today, from wireless telegraphy to wireless Internet, from the Industrial Revolution to the “Computer Revolution”\textsuperscript{13}.

An ideal future based on technology is at the heart of “techno-utopias”, which I define as ideal spaces or communities congregated around science and situated in the future. Stefan Zweig discusses the nineteenth-century technological utopias in \textit{Le Monde D’Hier} (1944):

\begin{quote}
Le XIXe siècle, dans son idéalisme libéral, était sincèrement convaincu qu’il se trouvait sur la route rectiligne et infaillible du "meilleur des mondes possibles". […] Et en effet, à la fin de ce siècle de paix, une ascension générale se faisait toujours plus visible, toujours plus rapide, toujours plus diverse. Dans les rues, la nuit, au lieu des pâles luminaires, brillaient des lampes électriques ; les grands magasins portaient des artères principales jusque dans les faubourgs leur nouvelle splendeur tentatrice ; déjà, grâce au téléphone, les hommes pouvaient converser à distance, déjà ils volaient avec une vélocité nouvelle dans des voitures sans chevaux, déjà ils s’élançaient dans les airs, accomplissant le rêve d’Icare. Le confort des demeures aristocratiques se répandait dans les maisons bourgeoises […] c'était l'œuvre de la science, cet archange du progrès ; d'année en année, on donnait de nouveaux droits à l'individu, la justice se faisait plus douce et plus humaine, […] quoi d'étonnant, dès lors, si ce siècle se chauffait complaisamment au soleil de ses réussites et ne considérait la fin d'une décennie que comme le prélude à une autre, meilleure encore ? On croyait aussi peu à des rechutes vers la barbarie, telles que des guerres entre les peuples d'Europe, qu'aux spectres ou aux sorciers ; nos pères étaient tout pénétrés de leur confiance opiniâtre dans le pouvoir
\end{quote}

infaillible de ces forces de liaison qu'étaient la tolérance et l'esprit de conciliation. Ils pensaient sincèrement que les frontières des divergences entre nations et confessions se fondraient peu à peu dans une humanité commune et qu'ainsi la paix et la sécurité, les plus précieux des biens, seraient impartiès à tout le genre humain.  

The text written by Stefan Zweig perfectly illustrates the definition of techno-utopias. Thanks to “the miracles of science and technology”, the religion of Progress will bring “peace”, “velocity”, a sense of community, and “justice” to all humankind and fulfill Icarus’s dream. Thanks to the railway, the telephone, the telegraph and the airplane, men will experience the comfort once reserved for aristocracy and also connect (“converser à distance”). Through technology, borders and distances will be reduced, bringing peace on earth (“les frontières des divergences entre nations et confessions se fondraient peu à peu dans une humanité commune.”)

While in traditional utopias happiness was guaranteed by a perfect form of government harmoniously uniting members of a community, I show that communication networks such as the railway, the telegraph, the telephone, and later the computer were thought to connect men, bring nations and individuals closer, lead to global pacification, and increase equality. In the Paris Guide de l’Exposition Universelle, Victor Hugo imagines how these networks will affect the twentieth century:

Il n’y aura plus de ligatures ; ni péages aux ponts, ni octrois aux villes, ni douanes aux Etats, ni isthmes aux océans, ni préjugés aux âmes. Les initiatives en éveil et en quête feront le même bruit d’ailes que les abeilles. La nation centrale d’où ce mouvement rayonnera sur tous les continents sera parmi les autres sociétés ce qu’est la ferme modèle parmi les métairies. Elle sera plus que nation, elle sera civilisation ; elle sera mieux que civilisation, elle sera

famille. Unité de langue, unité de monnaie, unité de mètre, unité de méridien, unité de code.

The scale of communication suddenly changed in the nineteenth century: as revealed by the gradations in Hugo’s text, people went from communicating between cities to between states and oceans, from between nations to between civilizations. The notion of unity underlined by Hugo is commonly found in utopias to reflect the sense of community and concord that reigns in an ideal society in which conflicts do not exist.

I claim that techno-utopias are new forms of utopias that appeared in the second half of the nineteenth century, but also harken back to the origins of the concept in the Renaissance. Even though utopian ideals have always existed in mythology and religion, it is not by chance that the term “utopia” was coined by Thomas More in the sixteenth century, during a time of profound intellectual and scientific changes. Thomas More even designated natural science as a cultural and moral value on the island of Utopia. According to literary scholar Keith Booker, “science has been linked to utopian thinking since the very beginnings of modern science in the seventeenth century.”

More’s fictive island of Utopia comes at a precise historical moment. The progress of navigation, the conquest of the New World, the invention of the printing press, and the circulation of knowledge are among the developments that opened the doors for the scientific and intellectual revolution of the Renaissance. Several scholars argue that the birth of utopias is related to the discovery of the New World, America being considered a utopia in opposition with a dystopian Europe. It is not coincidental either that Francis Bacon was both a major participant of the scientific revolution and the author of what I consider to be the first

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scientific utopia, *New Atlantis*, a novel describing an ideal community governed by scientists. Even though utopias have always existed, they flourished from the sixteenth century until today, which underscores the modern dimension of the concept.

Despite the recent use of the term techno-utopia, the parallel between science and utopia can be considered an ancient one. Utopias are an expression not only of imagination but also of reason. In philosopher Ernst Bloch’s views, utopias are not unrealistic daydreams but realistic hopes—*docta spes*—guiding both men and historical progress. The word techno-utopia is not, indeed, an oxymoron that would oppose the reality of technology to the dream of ideal communities. Modernity does not equate to scientific rationality.

A utopian fiction, written at any time in history, is humanity’s way to envision a system that would guarantee the happiness of its members. Utopias are often composed of the same elements: happiness, sense of community, common property, and absence of sin, abundance, peace, immutability, and equality of the members of the group. The Golden Age represented by Hesiod in *Works and Days* is one of the most relevant examples:

> And they lived like gods without sorrow of heart, remote and free from toil and grief: miserable age rested not on them; but with legs and arms never failing they made merry with feasting beyond the reach of all evils. When they died, it was as though they were overcome with sleep, and they had all good things; for the fruitful earth unforced bare them fruit abundantly and without stint. They dwelt in ease and peace upon their lands with many good things, rich in flocks and loved by the blessed gods.  

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Etymologically, a utopia is a place of happiness: utopia is Greek for both “no place” and “good place”\textsuperscript{19}. In pre-nineteenth-centuries utopias, gods (as it the case in Hesiod’s text) or ideal governments would guarantee these principles by a series of laws and values. However, there is an ambiguity in the word utopia as it also means “no place”. A utopia is not necessarily a place.

The ideal community can be situated in another time. In the case of techno-utopias, the ideal space is represented in the future, describing technology—electricty in particular—as being able to bring comfort and happiness through the creation of new machines that would, for instance, liberate factory workers and reduce social inequalities or, in the case of the computer and Internet, provide access to culture to all the social classes. The ideal space can be a technological future, an online community or the virtual world of a video game. In this sense, virtual worlds resemble heterotopias, which Michel Foucault defines in \textit{Des Espaces Autres}\textsuperscript{20} as a space out of time and out of space into which one can escape—such as gardens or boats.

From Thomas More's work \textit{Utopia} (1516), to Francis Bacon's \textit{New Atlantis} (1627), to Etienne Cabet's \textit{Le Voyage en Icarie} (1840), utopian discourse had been invariably centered on voyages, taking place on remote islands, with the search for new forms of government as its main purpose. Starting with the Second Industrial Revolution (generally considered to begin around 1870 and end in 1914), major thinkers, writers, and activists abandoned the idea that new forms of government could lead to a better society, and a growing number of authors rewrote the implicit rules of the genre. I claim that their utopias were based on technology instead of...
seeking new forms of government; they are situated in a near future rather than on a remote island, and no longer are they based on the hopes associated with travel.

The first chapter of this essay is thus focused on my argument that utopias are now based on technology rather than politics. I chose the example of Travail by Emile Zola, the third volume of a series entitled Les Quatre Evangiles that is no longer published and can only be found in the complete works of Emile Zola. The novel is not only overlooked by criticism but also exclusively considered as a political utopia by the rare scholars who have analyzed it. I reexamine the novel by emphasizing the crucial role of the machines as the central element of the novel, an element that enables the creation of an ideal community as machines free men from the alienating work of the factories. I analyze the way in which machines and the electricity that animates them are integrated into literary symbolism. As Fin de Siècle France often referred to electricity as la fée électricité, Zola and many writers of the time described electrical energy as a fairy or goddess.

As developed in chapter 2, I will argue that nineteenth-century technological utopias are not described in the language of science, but in terms of its seeming contrary: the fairy tale. Relying on the work of Ernst Bloch, who established the relationship between utopia and fairy tales in his collection of essays The Utopian Function of Art and Literature, chapter 2 examines the fairy tale elements in literature, the press, and World Fair iconography in order to illustrate the new utopian discourse surrounding technology. I focus on an overlooked novel by Villiers de l’Isle-Adam, L’Ève Future (1886), in which a machine is to bring love and bliss to the protagonists. The story takes place in Thomas Edison’s laboratory, where, thanks to his experiments on electricity, he creates a machine-woman, an android that he names

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Hadaly (which means *ideal* in Persian), to replace his friend’s imperfect lover, the beautiful but shallow Alicia. As the machine is a replica of the real woman, his friend Lord Ewald mistakes Hadaly for Alicia and falls in love with the android. Rather than interpret the work as a science fiction novel, as most criticism does, I instead provide a close textual analysis showing how a new form of utopia is established through a curious union of science and magic.

It is no surprise that it is at the end of the nineteenth century, at the beginning of the Second Industrial Revolution that the celebration of science and technology also became part of a culture of the marvelous and the spectacular. Indeed, before the creation of Apple Stores and nanotechnology exhibitions in Japan, the World Fairs, beginning in 1851, were the first international celebrations of science. Science and technology had their palaces, allegorical statues, posters and painting glorifying the control of humans over nature and representing modern man as a new Prometheus.

Moreover, it is not coincidental that it is in the nineteenth-century that the myths of Pygmalion and Prometheus appeared in scientific fiction and discourse. The creation of machines and robots could easily be compared to the artistic creation and fascination of Pygmalion with his statue. As for the use of electricity by nineteenth-century engineers, it seemed at the time that men had literally stolen something from God since lightning was thought to be an expression of God’s anger. Scientific articles and novels are filled with these mythological references: Mary Shelley published *Frankenstein or the Modern Prometheus* in 1818 and, in Villiers’s *Eve Future*, the fictionalized character of Thomas Edison is also compared to Prometheus due to his work on electricity. He is even compared to Pygmalion when creating the android. The reference to Icarus, found in Stefan Zweig’s text, is also commonly employed when referring to the airplane.
Contrary to Max Weber, who considers that modern science has disenchanted the world\textsuperscript{22}, I will show that literature forces us to question this assertion. In fact, it is quite the opposite in nineteenth-century literature, a literature infused with scientific enchantment or \textit{merveilleux scientifique}. The term “disenchantment” implies the end of magic and the supernatural that, according to Weber, the Enlightenment and modern sciences had tried to get rid of in an attempt to fight superstition. However, we will see that science can still create enchantment.

As revealed by the expression “\textit{la fée électrique}”, I will argue that there is in fact a revival—or rather a persistence—of magical representations \textit{inspired by science itself} at the end of the nineteenth century due in part to the utopian dimension of technology. Even though modern thought had separated science and arts into two different fields since the implementation of experimental science during the Renaissance, \textit{fin de siècle} literature reestablished the link that had existed for centuries. A new genre appeared called “\textit{merveilleux scientifique}”, illustrated by writers such as Jules Verne, Albert Robida or Auguste Villiers de L’Isle-Adam.

Indeed, from Antiquity to the Renaissance, discoveries were communicated by scientists through fictionalized writings. Kepler’s \textit{The Dream} (1634), for instance, was the first scientific treatise on lunar astronomy and took the form of a science fiction novel in which a boy hears of an island— the moon— and imagines what the Earth might look like from it. Science and literature shared the same language and inventors were also writers. Science did not rely on falsifiable hypothesis and controlled experiment the way modern science does. Imagination and fiction were part of scientific writing. It was logical, then, to describe science in the language of fairy

tales. The term *mirabilia* was used indistinctively to describe both the marvels of fiction and those of science. Alchemy, despite its scientific dimension, was considered as a *mirabilia* as it had also a spiritual and mystical dimension\(^{23}\) and was concerned with the development of an elixir of life that would confer eternal youth. Travel narratives of scientific expeditions as well as descriptions of cabinets of curiosities or wonder rooms relied on marvelous symbolism. The nineteenth-century revival of a magical science, I argue, is best explained by the increasing role of science in *fin de siècle* culture.

The potential created by the Industrial Revolution gave birth to new hopes and dreams for the future, which changed our relationship to the time-space nexus. While Romantic literature was filled with nostalgic images of Antiquity and the Garden of Eden, *fin de siècle* novels represented the future and the possible machines it would contain. In the second half of the nineteenth century, numerous novels represented the future—either that of the twentieth century or a more distant future—such as Bodin’s *Le Roman de l’Avenir* (1835), Renouvier’s *Uchronie, l’Utopie dans l’Histoire* (1857), Emile Souvestre’s *Le Monde Tel Qu’il Sera* (1846), Edward Bulwer’s *La Race Future* (1871), Edward Bellamy’s *Looking Backwards* (1887), and William Morris’ *News From Nowhere* (1890) among others. The middle of the nineteenth century is also the time when the word *uchronia*—a utopia in time—was invented by Renouvier, reflecting a change in the representation of ideal spaces.

I claim that this tendency was confirmed by the creation of science fiction—the term appeared for the first time in 1853 in William Wilson’s essay *A Little Earnest Book upon a Great Old Subject*. Even though the genre of science fiction only became current in the 1920’s, it is not surprising that the term was used for the first time in the

1850’s. At the same time, the genre of speculative fiction flourished along with representations of the century to come that men imagined as ideal and based on technology. Indeed, descriptions of the twentieth century are explicitly found in novels such as *Le Vingtième Siècle* by Robida (1883) and *Paris au Vingtième Siècle* by Jules Verne (1860).

The dizzying pace of technological progress gave the impression that the near future could be radically different from the present, which was both exhilarating and terrifying. *The Time Machine* (1895) by H.G Wells can be perceived as a symbol of the feeling of speed, the element that fascinated people; the author describes the sensation of the narrator when he uses the machine for the first time:

I pressed the lever over to its extreme position. The night came like the turning out of a lamp, and in another moment came to-morrow. The laboratory grew faint and hazy, then fainter and ever fainter. To-morrow night came black, then day again, night again, day again, faster and faster still. An eddying murmur filled my ears, and a strange, dumb confusedness descended on my mind. I am afraid I cannot convey the peculiar sensations of time travelling. […] There is a feeling exactly like that one has upon a switchback--of a helpless headlong motion! […] The slowest snail that ever crawled dashed by too fast for me. […] The whole surface of the earth seemed changed.\(^{24}\)

The Second Industrial Revolution, also known as the Technological Revolution\(^{25}\), was a time of rapid change. While the First Industrial Revolution was based on steam, coal and iron, the second contained an incalculable number of

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discoveries mainly related to electricity: the electric car, the telephone, the phonograph, the metro, the streetcar, the railway etc. It was also the beginning of the cinema. This period, spanning from 1870 to 1914 was called La Belle Époque in France. In only forty years, technological discoveries were numerous, sudden and revolutionary. It was only during the second Industrial Revolution that people could benefit from technological advances, as confirmed by historian Bertrand Gille: “L’audace de certains, les profits d’un monopole, même temporaire, le goût du risque ne pouvaient manquer de donner au progrès technique ses véritables voies […] C’est entre 1870 et 1880 que le monde bascule, une nouvelle fois, vers des structures et des manières de concevoir le monde matériel qui sont tout à fait nouvelles.”

Even though the expression “Belle Époque” was created after the war, people at the time were aware of the exceptional dimension of these technological discoveries. In 1914, author Charles Peguy wrote: “Le monde a plus changé entre 1880 et 1914 que depuis les Romains.”

The pace of discoveries coupled with the pace of machines themselves gave birth to a discourse on the future. On the one hand, some were imagining a dystopian future in which robots and machines would take over the world. This discourse, although it existed in the nineteenth century, would prevail only after World War One due to the extensive use of new technology during the conflict. On the other hand, some were imagining a bright future in which machines would make life easier for humankind. This discourse dominated La Belle Époque. This discourse on the future is often related to technology as illustrated by Abert Robida in *Le Vingtième Siècle ou la Vie Electrique* in which he imagines flying cars. These discourses on the future

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were more abundant during the Universal Exhibitions, as illustrated by Victor Hugo in *Paris Guide de l’Exposition Universelle*:

> Au vingtième siècle, il y aura une nation extraordinaire. Cette nation sera grande, ce qui ne l’empêchera pas d’être libre. Elle sera illustre, riche, pensante, pacifique, cordiale au reste de l’humanité […]. la paix, déesse à huit mamelles, majestueusement assise au milieu des hommes ; aucune exploitation, ni des petits par les gros, ni des gros par les petits […]. Le continent fraternel, tel est l’avenir. Qu’on en prenne son parti, cet immense bonheur est inévitable.  

In this text, all the traditional utopian values are still expressed: equality, justice, fraternity, peace, and happiness. The tense has changed. In Hesiod’s *Works and Days*, it was the past while in Hugo’s text, it is the future. The notion of speed and its role in our contemporary “economy of attention” had already started to fascinate the Belle Époque, as I will show in chapter 3.

At the beginning of the twentieth century, technology remained fascinating to the point that the new aesthetic in the Futurist and Expressionist movements revolved around it. In chapter 3, I will argue that the Futurist movement illustrates the new relationship to time that had emerged in utopian thought in the nineteenth century. Indeed, utopias began to be represented in the future in the middle of the nineteenth century but it is at the beginning of the twentieth century that this new relationship will be illustrated by literature through movements such as Futurism— which emerged in 1909 with the first futurist manifesto— and the birth of science fiction— which will officially appear as a genre in 1927 with the publication of the

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first science fiction magazine. Through the example of Futurist texts by Filippo Tommaso Marinetti, the chapter analyzes how the impression of speed given by new engines and the dizzying pace of technological discoveries contributed to the conception of a perfect future rendered possible by science and technology.

It is still the case today as computers have generated techno utopian discourses and fictions. Indeed, I argue in chapter 4 that, with the creation of the Internet, there was a new wave of techno-utopias at the end of the twentieth century, during what journalist Steven Levy called “the Computer Revolution”. More precisely, I show how the World Wide Web, operating systems and virtual worlds materialized the utopian dreams and values of the nineteenth century. As they connect humans everywhere on earth, enable them to access and share knowledge, to create programs that are customized or are extension of their bodies, computers—through the Internet in particular—provide a sense of community and carry a promise of peace. But while the techno-utopian discourse surrounding the Internet has faded and has often been replaced by acerbic criticism, I will argue that science fiction novels and movies haven’t stopped what Patrice Flichy calls “l’imaginaire d’Internet” from expressing utopian values. I will take the example of the movie Her by Spike Jonze (2013) in which a man falls in love and starts a relationship with his operating system, Samantha, a relationship that seemed astonishingly similar to the one between Hadaly and Lord Ewald in L’Eve Future. In this chapter, I seek to demonstrate that the techno-utopias that we imagine as contemporary have established precedent.

In this essay on techno-utopias, I will use the terms utopia, dystopia, heterotopia and uchronia, among others to designate ideal and virtual spaces. However, there are numerous terms and concepts that can be used to analyze the relationship between men and machines. Indeed, the purpose of this study will not be
to determine if a particular novel is a techno-utopia or a dystopia but to question what constitutes our relationship to technology and its role in the modern conception of happiness. Thus the definition of the terms utopia and dystopia should not be too narrow. They can both characterize all the works analyzed in this essay, as they all contain a utopian and a dystopian dimension, a “techno-philian” and “techno-phobian” aspect. For instance, in *L’Ève Future*, Villiers sometimes makes a mockery of the inhuman aspect of scientific experiments while, at the end of *Travail*, written in 1900, Zola anticipates the use of technology in the atrocities of World War One.

Thus, one should not think in terms of Manichean oppositions between the utopian place, conceived as perfect, and reality, represented as dystopian. In the conference *Des Espaces Autres*, Michel Foucault draws a parallel between utopias and mirrors: they function as reflections of reality. Consequently, I would define utopias as *distorting mirrors* of reality, which should not be perceived as mere fantasies. Through the same poststructuralist approach as Foucault, Louis Marin, in *Utopiques: Jeux d’Espaces*, also rejects binary oppositions:


Moreover, utopias are mistakenly considered not only as simplistic and unrealistic but also as irrational. I will attempt to show that the concept of utopia is related to modern thought and, as such, often trapped in binary oppositions between reason and belief. I hope my analysis will resolve the contradiction by confirming Bruno Latour’s argument: we have never been modern.

**Scholarly Justification**

The scholarly justification for this thesis is threefold. Firstly, it will contribute to literary studies by drawing a parallel between literature and other disciplines: philosophy and the history of technology. I analyze the birth of science fiction in the 1920’s as the direct product of the nineteenth century’s fascination with science. Rather than see science fiction as a literary genre, emerging from individual authors such as H.G Wells and Jules Verne, I show how discoveries such as electricity, the railroad, and the telegraph generated a fascination that has influenced literature and our contemporary culture. By attentively grasping the larger discourse that emerges out of technological progress, literary history is no longer a hermetically sealed domain of "great works." Unfortunately, literary scholars have tended to separate gothic novels from fantastic literature, scientific tales and science fiction, as if faced with different genres while these in fact only reflect the evolution of our relationship to science. Thus, the history of science enables me to shed a new light on literary history. In a reciprocal manner, this putting together of literature and science opens up an entirely new perspective on the history of science itself. Rather than the dominant, unidimensional, linear history of scientific discoveries, we instead see how scientific progress is more complex and culturally coded. Technical innovation does not happen in a vacuum, but depends up on the belief in the ability of science to better society and improve life.
The discipline of philosophy enables me to rehabilitate fictional utopias, often considered as a naïve literary genre. I will argue that utopia is not a genre but a philosophical concept that is expressed through the arts, and literature in particular. I start with Ernst Bloch's notion that there are utopian elements in various forms of artistic expression, including poetry, fairy tales, popular fiction, theater, dance, and the cinema. Bloch's position will allow me to analyze utopia not as a genre of literature, but as a transversal concept which crosses genres, styles, and historical periods.

Secondly, the question that will guide the discussion above all will be focused on the relationship between man and machine, even though techno-utopia will be the theme of this essay. Utopia is indeed a modern concept based on reason, as developed by Ernst Bloch: “If one turns from here, that is, from the old story that remains eternally new, to the really new and newest history, to the fantastic changes of technology, then it is not surprising to see even here a place for forming fairy tales, i.e., for technological-magical utopias. Jules Verne’s *Journey to the Moon* and other creative narrations of a technological capacity or not yet capacity are still pure formations of fairy tales. What is significant about such kinds of ‘modern fairy tales’ is that it is reason itself that leads to the wish projections of the old fairy tale and serves them.” As expressed by Ernst Bloch, “technological-magical utopias” are based on reason.

The concept of modernity is thus central when analyzing the rapport between humans and machines. Indeed, modernity is characterized by emancipation from religion. It replaces a system in which religious transcendence was defining the perception of the universe. Thanks to Descartes’ methodic doubt, certainty is no

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longer guaranteed by God or the Church, but by Man's subjective judgement. Technology is at the center of the modern world. Through the construction of machines, men are creators and gain control over nature. Our belief in technological progress as a synonym of human progress is one of the best illustrations of modernity.

The glorification of Progress exemplified nineteenth-century faith in science. From Condorcet to Auguste Comte, the cult of Progress that appeared with the Enlightenment developed in the nineteenth century to become a central value of the time. In Paris, scientists opened *Les Maisons du Progrès* in order to promote the popularization of science, also stimulated by the creation of many scientific periodicals such as *L’Électricité*, *La Science Illustrée*, and *Science et Vie*. Public lectures were given by renowned scientists such as Louis Pasteur, who taught at the Conservatoire National des Arts et Métiers. Later, Progress was the theme of the Chicago World’s Fair of 1933. Progress could be considered a new cult, as underlined by rhetorical devices employed by novelists such as Stefan Zweig, who describes nineteenth-century faith in Progress in the text mentioned above:

>Cette foi en un "Progrès" ininterrompu et irrésistible avait véritablement, en ce temps-là, toute la force d'une religion. On croyait déjà plus en ce "Progrès" qu'en la Bible, et cet évangile semblait irrefutablement démontré chaque jour par les nouveaux miracles de la science et de la technique.  

As exemplified by Stefan Zweig, Progress is a value celebrated as part of what I consider a new religion of technology. Zweig goes so far as to compare progress to the Gospel. As the cult of Reason, the cult of Progress illustrates modern beliefs based on values rather than myths or religions. This thesis is developed by several scholars,

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such as philosopher Michel Freitag. In *Dialectique et Société*[^34], Freitag identifies several types of societies throughout history. In mythical societies (*Gemeinschaft*), ideologies were based on myths and the relationship to time was oriented towards a mythical past. In traditional societies (empire, cast system, monarchies), ideologies were based on monotheist or polytheist religions and the relationship to time was oriented towards a destiny or salvation. In modern societies (*Gesellschaft*), ideologies are based on principles such as Reason, Freedom or Progress and the relationship to time is oriented towards the future and a better world. The celebration of Progress in the nineteenth century is thus inscribed in a modern cult and underlines the dreams of better tomorrows.

This is what French historian of science Bruno Latour would call a “non-modern idea”. The notions of Reason and Progress, celebrated by the philosophers of the Enlightenment, tended to suggest that scientific discoveries would contribute to a rationalization of our conscience and eliminate myths, if not faith itself. To Latour, this question should be approached from an anthropological perspective, as “pre-modern” societies did not separate technics from politics, nature from culture and myths from reason. However, Latour rejects the concepts of pre or post modernity: to him, we are “non-modern”[^35] in many aspects, including the way we approach science. Latour’s conception enables me to bridge the gap between rationality and folklore, science and the humanities. I will thus integrate technology in a reflection on “non-modernity”.

As revealed by this study, our faith in technology and machines in particular has become a new belief system as men are the new gods able to create clones,

cyborgs and machines that are extension of themselves. I will argue that machines are also celebrated as new idols. As Latour draws a parallel between the etymology of the French words *fait* and *fétiche* and coins the term “faitiches”\(^{36}\), I will draw on his theory to argue that machines are modern fetishes.

My work will thus be at the nexus of the history of science and the history of literature through the analysis of the technological discourse conveyed by nineteenth and twentieth-century images and texts—posters, paintings, films, novels and press articles. Technology and science have invaded so many aspects of our contemporary culture that it has become the source of a discourse (*logos*). Michel Foucault, for instance, in *Naissance de la Clinique: une Archéologie du Regard Médical*, traces the impact of the medical gaze on the sudden re-organization of knowledge at the end of the eighteenth century and throughout the nineteenth century. Foucault argues that the French and American revolutions that spawned modernity also created a "meta-narrative" of scientific discourse that held scientists, specifically medical doctors, as sages who would in time abolish sickness and so solve all of humanity's problems. For the nineteenth-century moderns, medical doctors replaced the medieval clergy; physicians save bodies, not souls. The doctor's medical gaze was believed to penetrate surface illusions, in near-mystical discovery of hidden truth and refers to a scientific imaginary.

This scientific discourse contains signs and symbols that compose what is called in French “un imaginaire”\(^{37}\) and theorized by philosophers Jean-Paul Sartre\(^ {38}\),


Cornelius Castoriadis, Gilbert Durand and Jean-Jacques Wunenburger among others. The latter defined it as “un ensemble de productions, mentales ou matérialisées dans des œuvres, à base d'images visuelle (tableau, dessin, photographie) et langagières (métaphore, symbole, récit), formant des ensembles cohérents et dynamiques, qui relèvent d'une fonction symbolique au sens d'un emboîtement de ses propres et figurés.” As illustrated by Wunenburger and Sartre—who defines the imaginaire as a phenomenology of images—paintings and photographs are equally important in the analysis of the imaginaire and will constitute an integral part of this study. My work falls thus into the category of what had been recently labelled as imaginaire des sciences et techniques, which embodies the encounter of science with arts.

This research interest belongs to the larger field of Science, Technology and Society (STS) that emerged in the 1960’s and has been growing since the mid 1980’s resulting in the creation of many university programs, illustrating the necessity for academia to integrate a reflection on the impact of technology on other fields. Indeed, STS show how scientific research affects society, politics and culture and draws from a variety of disciplines, including anthropology, history, political science, and sociology. However, very few scholars in literature incorporate a reflection of science and technology. My work seeks to contribute to the compensation of this lacuna. Furthermore, scholars in literature tend to privilege a regional approach.

Lastly, I will claim that a global perspective is crucial when analyzing techno-utopias. Because techno-utopianism is related to the Industrial Revolution and the Machine Age, it needs to be examined not as a French phenomenon but as a

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worldwide expression of the impact of technology on our lives. The rare scholars writing on techno-utopias, such as communication scholars Fred Turner and Pierre Musso, and historian Howard Segal – author of *Technological Utopianism in American Culture* – all focus on a national perspective. For instance, Howard Segal traces the emergence of the World Wide Web through a sociological analysis of its founders. Fred Turner uses the biography of Stewart Brand as an illustration of the founding values of the Internet. French philosopher Pierre Musso adopts a more historical perspective when claiming that our contemporary ideology of networks comes from the nineteenth-century utopian thinker, Saint-Simon and his disciples. When examining the rare authors working on techno-utopias, one can easily notice than none of them is a literary scholar; their field is either history or communication.

Literary scholars who studied the intrusion of machines into literature have tended to adopt the same national perspective and analyze nineteenth-century authors without considering the consequence of the representation of machines in our contemporary *imaginaire*. It is the case of Jacques Noiray who delves into the role of machines in Jules Verne, Emile Zola and Villiers de l’Isle-Adam. Leo Marx, author of *The Machine in the Garden, Technology and the Pastoral Ideal in America* (1964), considers that the introduction of the machine into the landscape

reveals a contradiction between the symbolic values of American landscape and its new industrial powers.

Conversely, I believe that nineteenth-century literature reflects a global phenomenon common to several industrial countries rather than expressing national values. My perspective is thus more global than that of other literary scholars. Situated at the nexus of literature, philosophy and the history of science and technology, my work seeks to reconcile scientific thought with literary imagination.

This dissertation is unique not only because its theme is recent and has rarely been studied but also because of its focus on literature. Through textual analysis, this work will make connections between different utopias from Antiquity to the twenty first century, among press articles, poems, novels and visuals, between Villiers de l’Isle-Adam’s *Eve Future* and Spike Jonze’s film *Her*. We will see that rhetorical devices are very often what define utopias and what distinguish them from myths and ideologies. Because these devices haven’t changed, they enable me to point out the overshadowed utopian aspects of our contemporary technological culture.
CHAPTER 1: FROM POLITICAL TO TECHNOLOGICAL UTOPIAS: THE IDEAL COMMUNITY IN ZOLA’S TRAVAIL

“La science, la vérité seule émancipera l’homme toujours davantage.”

Introduction

When one thinks about nineteenth-century utopias, Henri de Saint-Simon, Robert Owen or Charles Fourrier come to mind. The century was marked to such a degree by political utopias that the term “utopia” became a synonym for “utopian socialism” in nineteenth-century vocabulary. Proudhon, in his essay *Système des Contradictions Economiques ou Philosophie de la Misère* (1846), employs the terms of socialism, communism and utopia as synonyms. It is true that the origins of socialism are often related to utopias. According to political historian Jacques Droz, Plato’s *Republic* already described an ideal community that was based on shared means of production within an elite caste, even though the society described by Plato does not involve social equality. In Asia, some movements of Confucianism and Islam describe a fraternal organization of society. Within Christianity, millenarianism advocates the creation of an egalitarian religious community. The genre of utopias that appeared in the sixteenth-century also shared with socialism several values such as the achievement of social equality through the abolition of private property, which was

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considered the source of human unhappiness.\textsuperscript{51} Interestingly, many nineteenth-century socialist organizations called themselves “utopia,” confirming the parallel between the genre and socialist ideology.\textsuperscript{52} However, the nineteenth century also marked the failure of the Revolutions of 1848 and of the Paris Commune of 1871, when radical political change was considered impossible, and politics became increasingly technical. It is in this conjuncture that technology started to be perceived as a political solution, as exemplified by Zola’s novel *Travail*.

Zola says of his *Quatre Évangiles*, written towards the end of his life and composed of four volumes (*Fécondité, Travail, Vérité, Justice*): “Tout cela est bien utopique mais que voulez-vous? Il faut bien permettre à mes vieux jours de rêver un peu.”\textsuperscript{53} For most readers and scholars, Zola is not considered a utopian thinker. However, it is often forgotten that during his exile in England Zola had read Fourier and many political theorists of his time: he had read Edward Bellamy’s utopia (*Looking Backward*), Jean Grave, Piotr Kropotkine, Saint-Simon, Auguste Comte and Etienne Cabet’s *Voyage en Icarie*, which inspired the architecture of the ideal city in his *Travail*. While composing *Travail*, he wrote: “un ami m’a prêté Fourier et je le lis en ce moment avec éblouissement.”\textsuperscript{54} Amazed by such authors, Zola gave a new turn to his late works, revealing an “optimisme éclatant.”\textsuperscript{55}

Written before his death between 1898 and 1902, *Les Quatre Évangiles* were his last novels and contrasted with most of his previous work. Only the first three novels were published before he died (*Fécondité, Vérité* and *Travail*), the latter

\textsuperscript{52} Steger, Manfred. *The Quest for Revolutionary Socialism: Eduard Bernstein and Social Democracy*. Cambridge: Cambridge University Press, 1996. p. 28
directly inspired by Fourier. Zola wrote in his preparatory notes: “Travail est l’œuvre que je voulais faire avec Fourier, l’organisation du travail, le travail père et régulateur du monde. Je garde pour héros Luc, fils de Pierre et de Marie, et je crée avec lui la Cité, une ville de l’avenir, une sorte de phalanstère.” Indeed, the novel represents a utopia governed by the hero, Luc the apostle.

Even though the novel is overlooked today, unobtainable in bookstores and considered to be naïve, the reception was more positive when it was released. Jean Jaurès declared: “La révolution sociale a enfin trouvé son poète.” Fourier’s disciples went so far as to organize a banquet to celebrate the publication of the novel in the newspaper l’Aurore in 1901. For these reasons, Travail is often considered to depict a socialist utopia.

However, when Zola wrote Travail, time had passed since the publication of Cabet’s and Fourier’s works. Utopias from the first half of the century were criticized and questioned. As mentioned above, the failure of the revolutions of 1848 and 1871, together with the phenomenal scientific progress of the century and the second Industrial Revolution in particular—based on electricity and oil—explains the fact that late nineteenth-century utopias are often centered on technology. It was a fact that machines did improve working conditions.

As illustrated by the ideal factory in Zola’s novel, machines considerably improved the everyday life of nineteenth-century workers and artisans, contributing to the faith in better tomorrows. By 1900, factory workers of France and Germany

worked a thousand hours less per year than in 1800 and six hours less per day. In 1914, they worked eight hours a day while it had been approximatively fourteen hours for several centuries. Children progressively stopped working in factories and governments passed laws rendering school mandatory, which was the case in France in 1881.\(^{59}\) As described by Zola in *Au Bonheur des Dames*, workers’ rights and protection were non-existent and the bourgeoisie was the class benefitting from the changes. However, the promises carried by new machines profoundly marked society as a whole.

Prices of consumer goods decreased thanks to improved transportation. The use of machines such as the telegraph, the telephone and electric cars became more visible in urban landscape and accessible to the bourgeoisie and the upper class. It was also a time when the industry of entertainment and leisure developed. In Paris, between 1900 and 1914, 175 movie theaters opened their doors. The bourgeoisie traveled more and more, encouraged by the advertising campaigns of the railway companies. Numerous “maisons du peuple,” community centers and organizations were created, such as the Salvation Army.\(^{60}\)

*Travail* was written in this context of enthusiasm, at a time that would later be called La Belle Époque, and that would also mark the beginning of the Era of the Machine. The novel takes place in the fictional city of Beauclair and describes the slow degeneration of the factory of L’Abîme and the creation and expansion of an ideal community, La Crècherie, where, thanks to electricity, working conditions have improved, leading men to happiness. It is divided into three parts. Zola states in his preparatory notes that the first part is a dystopia, a description of l’Abîme, the factory,

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\(^{60}\) Created in London in 1865, it opened in Paris in 1901.
as a living hell; the second part narrates the early stages and difficulties in the construction of La Crêcherie, while the last part recounts the prosperity of the utopian city, Luc’s dream come true. In this city, electricity is everywhere: in machines, in the streets, in electrical cars. Jordan, the scientist and friend of Luc’s, goes so far as to imagine an electrical sun.

Scholars such as Frederick Ivor Case\(^6\) have tended to focus on the political dimension of Zola’s utopia due to the references to Fourier sprinkled throughout the novel. As for Fabian Scharf’s extensive study of Zola’s utopias,\(^6\) it devotes only a few pages to the role of technology in his novels. In contrast, it is precisely technology that will be my focus in this chapter. It is of course undeniable that the plot of the novel, however, is that of a socialist utopia, which explains why scholars have focused exclusively on this aspect. Indeed, La Crêcherie is characterized by common ownership and democratic control of the means of production. In this society, there is no private property, no authority, no monetary system, no divorce, no judiciary system, no prison, and no class system. However, I will argue that the new ideal city is rendered possible by technology and that technical innovations were thought to lead to social progress, as expressed by Marx in *Capital*.

Firstly, I will begin by analyzing *Travail* as a technological utopia rather than a political one. My perspective will thus be different from that of Henri Mitterand, who considers Zola’s novel as based on a social project: “Dans *Travail*, le mirage politique et social l’emporte […] sur le mirage technique.”\(^6\) I will demonstrate how technology was thought to lead to social progress in the writings of a nineteenth-century thinker: Saint-Simon. This relationship between politics and technology and, more precisely,


\(^6\) Notice de *Travail, Œuvres Complètes*, t.VIII, op.cit., p.981.
the increasing faith in technology rather than politics as a solution to social problems, has only been considered by scholars in relation to Marxism. I will also consider the Universal Exhibitions of the nineteenth and twentieth centuries to be illustrations of the intersection of political and technological discourse. The World Fairs were indeed a way to celebrate nationalism through each country’s technological inventions. As Zola was visiting the Fair of 1900 while writing *Travail* —released a year later— I will draw on press articles published at the time to demonstrate how the legitimation of politics was based on science and vice versa. Indeed, I will argue that the press played an important role in the diffusion of scientific discourse through the multiplication of scientific periodicals accessible to a wide audience.

Second, after defining technology as the founding value of the utopia, I will analyze the reasons of the widespread fascination with technology. More precisely, I will show that the notion of network (here the electrical network and the railway) has the same function as the ideal government of traditional utopias in the sense that it connects individuals and generates a sense of community and the feeling of happiness. The press and literature of the *Fin de siècle* generates a discourse illustrating the new faith in technology. Thanks to *la fée électricité*, the telegraph, the telephone, electrical engines of planes and trains, the countries involved in the Industrial Revolution imagined that distances between men would be reduced, peace would be guaranteed, and machines would prevent men from working and suffering.

Community, peace, and happiness are the core values of any utopia. Since the publication of Thomas More’s *Utopia* in 1516, however, a latent question lies in utopian texts: what form of government can guarantee human happiness? From the late nineteenth century until today, people have tended to consider technology rather than politics to be a solution. I will show how it goes back to the Enlightenment but
mostly to Saint-Simon and his disciples, who widely contributed to what Pierre Musso calls “retiologie,” the ideology of the network. This aspect has never been considered by scholars who analyzed Zola’s utopias as they mostly focused on their political aspect and the role played by Zola’s reading of Fourier without even mentioning Saint-Simon.

Third, based on this reflection on technocracy, I will demonstrate, how technology is more than the foundation of a political system. Science could even be considered as a new religion, as a cult is devoted to technology in Zola’s novel. The last part of this chapter will thus explore what Noiray calls a technolatry through descriptions of machines as new idols and the factory as a place of worship in Zola’s ideal community.

1. Technology, condition of the utopia

1.1. The role of politics

Fourier’s ideology and science are the two pillars of Zola’s ideal city, the first one incarnated by Luc, designated as “the apostle” and creator of the utopia, and the second represented by Jordan, the scientist. However, the scientific aspect is often overshadowed by the extensive political discourse contained in the novel. The Fourierist ideology is indeed what is most often described by Zola, who details the political system of La Crècherie, the ideal community within the city of Beauclair: the death of capitalism in the town, the gathering and redistribution of properties and productions, the creation of coeducational schools, the end of Catholicism, poverty, crime and social classes, the instauration of the four-hour working day, etc. Luc owes his idea for La Crècherie to Fourier: “C’était à Fourier qu’il devait d’avoir osé, d’avoir tenté l’expérience de la Crècherie. […] Fourier, évoluionniste, homme de méthode et
de pratique, en apportant l’association entre le capital, le travail et l’intelligence, à titre d’expérience immédiate, aboutissait d’abord à l’expérience des collectivistes, ensuite même au rêve libertaire des anarchistes” (Travail, 188).

Work and intelligence are the core values of Luc’s political conception. In the ideal city, working becomes a pleasure. As indicated by the title, the most important political value in the novel is labor. For factory workers and farmers to be liberated from pain and misery, they need the help of machines, which is where Zola’s political manifesto becomes a scientific utopia. It is the new machines, working with electricity, that condition the realization of Luc’s project.

1.2. Technology, the Foundation of the Utopia

Before Jordan’s death, Luc admits that science was the foundation of his utopia:

La science reste la grande révolutionnaire, vous me le disiez au début, et chaque pas en avant de notre longue existence est venu me prouver combien vous aviez raison… Est-ce que le Beauclair d’aisance et de solidarité serait déjà possible, si vous n’aviez mis à sa disposition cette énergie électrique, l’agent devenu nécessaire de tout travail, de toute vie sociale ? La science, la vérité seule émancipera l’homme toujours davantage, le fera le maître de sa destinée, lui donnera la souveraineté du monde, en réduisant les forces naturelles au rôle de dociles servantes… Pendant que je bâtissais, mon ami, vous me donniez de quoi souffler la vie à mon mortier et à mes pierres. (186)

Science, indeed, changes life for factory workers. While in l’Abîme they were enslaved by the burden of labor, the machines of La Crêcherie replace men so that they only have to supervise. Science, and especially electricity, participate in the
utopia as it contributes to happiness. According to Georges Jean, in *Voyage en Utopie*, a utopia is a society in which everything guarantees happiness on earth. The fact that *machines* are the cause of men’s felicity in La Crècherie exemplifies the techno-utopian dimension of *Travail*.

Despite the extensive discourse on politics in the novel and the references to Fourier, towards the end of the novel the main character Luc arrives at the conclusion that it is not politics but technology that contributes to happiness in La Crècherie: “Luc ménageait une surprise à Jordan, voulant le fêter lui aussi dont les travaux de savant allaient plus faire pour le bonheur de la Cité que cent années de politique” (141).

At the beginning of the novel, in the dystopian first part and the transitional second part, most of the characters have identified with an ideology. Some are anarchists, unionists or libertarians and they debate about the best solution for the future of the city. But the more one turns the pages of Zola’s novel, the less it resembles a political manifesto. Science and work predominate, setting ideologies aside, as explained by one of the characters, Bonnaire, accused by Ragu of being an anarchist: “Oh! Mon bon ami, j’étais collectiviste et tu m’as reproché de ne plus l’être. Maintenant, tu me fais anarchiste…La vérité est que nous ne sommes plus rien du tout, depuis le jour où le rêve commun de bonheur, de vérité et de justice s’est réalisé…” (177).

1.3. Technology and Community Spirit

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The end of ideologies in the ideal city raises a question here: why would technology guarantee peace and concord in a community better than politics? What is crucial in Ragu’s quote is “the common dream” rendered possible by science, a dream that had failed to come true while workers relied simply on ideologies. Indeed, the point I want to underline here is that technology becomes a utopia in the middle of the nineteenth century because it has the ability to unite a society. The core principle of any utopia is to theorize the best way to guarantee happiness, peace and unity within a society.

I would like to point to the fact that, while politics and ideologies divide, technology does not. Contrary to science, technology, though of course based on scientific knowledge, does not rely on theories but on concrete applications through the construction of machines. While one can demonstrate technophilia or technophobia, technology does not generate the multiplicity of possibilities contained in politics. Indeed, there is a countless number of ideologies or possible regimes and it is difficult to imagine a government that would satisfy all the members of the community. The first part of the novel, which takes place in the factory of l’Abîme, is filled with long political debates between the workers (the conservatives, the communists, the anarchists, the collectivists, etc.). The second part describes the transition before the final peaceful consensus.

This consensual dream is rendered possible by science. The political administration of the city even becomes useless since there is no government. The ball for the wedding of Lucien Bonnaire and Louise Mazelle is celebrated at the city hall, which served as mere décor rather than a politically significant edifice: “On dansait sur les ruines de l’autorité, dans cette mairie qui devenait peu à peu la vraie maison commune, où le rôle du maire n’était déjà plus que d’être un lien fraternel, entre les
divers groupes sociaux” (148). The metaphor of the ruins reinforces the opposition recurrent in the novel between the old society and the new, implying that politics has come to an end.

Zola’s utopia questions authority in general, especially political and religious ones, as in the world of the novel they are oppressive and generate conflict. At the end of the novel, Luc’s model of La Crècherie has spread all over the world: “la délivrance volait d’un continent à l’autre, balayant les gouvernements et les religions, unissant les races” (194). Men are thus liberated from politics and religion, which are “swept away.” In many utopias, members of the ideal community all believe in the same god and do not have any form of government, as in Diderot’s *Supplément au Voyage de Bougainville* (1772). I argue that the predominance of science over politics in the novel is due to the influence of Saint-Simon’s theories, which I will now discuss.

1.4. The Influence of Saint-Simon

To Saint-Simon, government becomes increasingly irrelevant, since, thanks to the disappearance of private property, greed and poverty cease to exist. As they were the main sources of conflict, society becomes pacific. Inspired by certain aspects of Saint-Simon’s theories, Engels wrote in *L’Anti-Dühring*: “dès qu’avec la domination de classe et la lutte pour l’existence individuelle disparaissent aussi les collisions et les excès […], il n’y a plus rien à réprimer et il n’est plus besoin d’un pouvoir spécial de répression, [d’] un État.”

Symbols of state disappear in Zola’s novel and are replaced by scientific symbols. In La Crècherie, prisons are closed and the city hall is replaced by

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laboratories, as Bonnaire explains to Ragu, who, coming back after a long absence, cannot recognize the city:

Seulement, comme le vieux bâtiment de la mairie tombait de pourriture, on l’a démoli, avec l’école ancienne, où tant de gamins avaient ânonné sous la férule.

Et, tu vois, à la place, cette série de grands pavillons, les laboratoires de chimie et de physique, où chaque savant est libre de venir étudier, expérimenter lorsqu’il pense avoir fait quelque découverte, utile à la communauté. (174)

While a school is rebuilt in a new building (and new teaching methods are employed), the city hall is not. Science has replaced political institutions. Discoveries in physics and chemistry are considered more useful to the community. However, the city has a “maison commune” (156) in which members of the community can meet, but the authority of the mayor has disappeared.

1.5. The Scientist, the Second Apostle

The government of the city is administrated by the people, under the guidance of Luc. He is the main character of the novel, as stated by the scholars who examined *Travail*. However, in the creation of the utopia, I consider the second most important character, after Luc, to be Jordan, the scientist and inventor of new machines, a character who is not even mentioned by the scholars who have analyzed *Travail*. I will argue that, far from being a secondary character as it has been hitherto considered, his role is crucial.

At the end, he and Luc are the last men to die as if they both had a mission to accomplish: Luc wanted to witness the success of his political enterprise, while Jordan wanted to discover a way to develop solar power. Moreover, Jordan mostly appears in the second and third part of the book since they constitute the utopian parts of the
Thus it is Jordan and his scientific discoveries, mostly present at the end of the novel, are associated with the utopia.

Lastly, Jordan does not represent science as a practice but as a value. Zola’s scientist is a dreamer, animated by a political ideal. He is often represented “dans une posture de songerie” (321), only goes out of his laboratory to admire the application of his discoveries, to which his life is devoted: “enfermé dans son laboratoire, il y achevait sa tâche, il voulait s’y éteindre, le jour où sa tâche serait finie” (185). Jordan does have a task, indeed, a sacred mission. At the end of the novel, he never leaves his laboratory: “Jordan, toujours à la besogne dans son laboratoire, où il couchait maintenant, d’où il ne sortait plus” (183).

As members of the clergy devote their life to God, he devotes his to science, the religion of the novel. Zola even compares him to a priest: “Il s’était pris de passion pour les recherches que les applications de l’électricité ouvraient à l’étude des savants. Il fit construire, au flanc même de la maison de briques, un très vaste laboratoire […] À partir de ce moment, il s’enferma, vécut en moine tout à ses expériences, à sa grande œuvre, qui devint son existence même, sa raison d’être et d’agir” (132). The word “œuvre” reflects the sacred dimension of Jordan’s work, as God’s work is usually referred to as an “œuvre.” His celibacy also reveals his marriage to science. He lives with his sister who Zola confines to her role through the name he gives her: Soeurette. Instead of having descendants, he leaves his work on electricity as his legacy for the community of La Crècherie and humanity in general. The role of science in the novel is thus as important as politics and has more impact on the foundation of the new “cité du Bonheur.”
1.6. From Utopias to Science Fiction, From Politics to Science

Zola’s novel reveals a recurrent tendency in nineteenth-century literature. The shift from political to technological utopias can be traced in literary history. Indeed, the early utopias, starting with Thomas More in the Renaissance, or even much earlier with Plato in his *Republic*, were often political essays on ways to organize and improve governments while serving as political manifestos against a certain regime. Indeed, More, a politician himself, was condemning Henry VIII’s regime when he published his book in 1516. His *Utopia* was the opposite of the contemporary English regime, suggesting the changes that should be made in the political order. From Voltaire to Fourier or Proudhon, utopias were associated with political essays.

With time, however, the role of politics in utopian literature declined to place *science* at the center. This shift became salient towards the middle of the nineteenth-century. In utopian writing, *fictions* replaced essays. According to science fiction novelist Serge Lehman, utopias transformed first into “voyages imaginaires” (*Robinson* by Defoe, *Voyages Extraordinaires* by Verne), which gave birth to “contes futurs” (*Brave New World* by Huxley) and finally to science fiction.66

Thus, it is not far-fetched to consider utopias and dystopias as a genre that considerably influenced the birth of science fiction, the founding fathers of which are considered to be H.G Wells and Jules Verne. The first volume of the first science fiction magazine, *Amazing Stories*, published in 1926, contained short stories by these two novelists, even mentioned on its cover (see fig.1).

However, despite the increasing role of science in utopian literature, wouldn’t it be simplistic to consider that technology has replaced politics? Aren’t there political implications regarding the role of science in society? Are politics becoming increasingly technical and concerned merely with technological issues?

1.7. The Link between Scientific and Social Progress

Because scholars such as Frederick Ivor Case\(^6^7\) have tended to focus on the role of politics in the novel, neglecting the role of science, the latter needed to be underlined. However, separating the importance of technology and politics in the foundation and realization of Zola’s utopia in *Travail* is a rather impossible task. Moreover, it is too simple to say that science has replaced politics in nineteenth-century utopian literature. They are intertwined and contribute to the creation of the ideal community in Zola’s novel as well as in other techno-utopias.

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The idea that scientific progress would lead to social progress was already present in the writings of eighteenth-century thinkers such as Condorcet and explains the link between science and politics in Zola’s novel. Indeed, the idea emerged with the Enlightenment and was further developed by Karl Marx, liberals, republicans and socialists such as Saint-Simon, Edward Bellamy, Fourier and Robert Owen. Machines were thought to enhance working conditions. As expressed in Capital, Marx believed that science and democracy were the two pillars of freedom for workers and society as a whole, as they would help it move from the realm of necessity to the realm of freedom. Furthermore, they were thought to limit the role of politicians and of the Church. According to Howard Segal, author of Technological utopianism in American Culture (2005), Marx and Engels believed in the potential of technology in the realization of their ideology: “[Marx and Engels] repeatedly hinted at a society radically superior to the existing capitalist one, which would utilize modern, especially automated, technology as a principal means of freeing the proletariat. The proletariat would be liberated not simply from their long-standing alienated labor but also for other, more varied and fulfilling activities.”

In the nineteenth century, the idea that advances in technology and experimental science inevitably produce an improvement in the human condition had a name: Progress. When looking at the concept of progress and questioning the celebration of it in the nineteenth century, one can easily imagine that the notion itself is ancient—the Latin word progressus means advance. It used to be associated with decadence as illustrated by the myth of the Golden Age described by Hesiod in Works

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and Days. Progress could thus have a negative connotation. Its role as a nineteenth-century value can be explained by the development of science. Interestingly, the inventor of the notion of progress, Francis Bacon, is also the author of what I would consider to be the first scientific utopia, New Atlantis, published in 1627. Francis Bacon’s utopia takes place on an island devoted to applied and pure science. Indeed, Salomon’s House is not only an ideal college composed of scientists but also the most pre-eminent institution of the island: “Sachez, mes amis, que parmi les choses excellentes accomplies par ce roi, il en est une qui surpasse toutes les autres. Ce fut la création et l'institution d'un Ordre ou Société que nous appelons la Maison de Salomon – la plus noble fondation, selon nous, qui fût jamais sur terre, et le flambeau de ce royaume.”

It is indeed during the Renaissance in Europe that the first expressions of humanity’s ability to progress appeared, precisely when Europeans realized the infinite progress that the printing press would generate and the territories they could conquer thanks to new means of transportation. Furthermore, the rediscovery of ancient scientific texts shed a new light on research. Scholar Marie Boas Hall even considers that there was a “scientific Renaissance” while Peter Dear claims that the Scientific Revolution began in the seventeenth century.

In New Atlantis, the author implies that scientific progress will help humans find the same conditions as those of the Garden of Eden. However, Bacon’s ideal was associated with the past while, in the eighteenth century, it started being associated

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with the future, as illustrated by the writings of Voltaire, Turgot and Condorcet. The latter, in *Esquisse d’un Tableau Historique des Progrès de l’Esprit Humain* (1794), traces the most important factors in the history of human progress (the Greek civilization, the printing press, Descartes and Newton), and devotes a last chapter to future advances. In the nineteenth century, Charles Darwin and Herbert Spencer joined the idea of progress to their theories of evolution.

Several scholars consider the idea of progress that was affirmed with the Enlightenment as a secularization of ideas from early Christianity and a reworking of ideas from ancient Greece. For many of them, Progress is a myth. Nietzsche considered Progress to be a modern and false idea. Thus, the notion of Progress conceals the profound relationship established by the Enlightenment between science and politics, the latter increasingly depending on the first. Technology was the foundation of a better society in the mind of many nineteenth-century thinkers.

1.8. Saint-Simon and Technocracy

Even though technocracy was invented in the 1920’s by American thinkers in the context of the Wall Street Crash of 1929, the origins of the concept of technocracy can be found in Saint-Simon’s writings. To Saint-Simon, politics should be based on economical and scientific methods. In *Lettres d’un Habitant de Genève à ses Contemporains* (1802), he advocates the creation of a European executive committee composed of twelve scientists and nine artists in order to guide civilization towards progress.

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75 See his *Tableau philosophique des progrès successifs de l’esprit humain* (1750)
The first technocratic institution is further described in *L’Organisation*, published in 1820: a parliament comprised of three chambers, one for *inventions* composed of engineers and artists, one for *analysis* composed of scientists and one for *execution* composed of industrials. This goal of this parliament is to solve social problems and to create a social order based on science and rationality. The preeminence of technology and industry over politics was at the core of Saint-Simon’s movement, which influenced nineteenth-century philosophy. Engels and Lenin drew considerably on Saint-Simon when declaring, “society is a factory.”\(^{78}\)

For Saint-Simon and his disciples, networks of communications such as the railway are the solution to conflicts. Michel Chevalier draws a parallel between democracy and communication: “Améliorer la communication, c’est travailler à la liberté réelle, positive et pratique…c’est faire de l’égalité et de la démocratie. Des moyens de transports perfectionnés ont pour effet de réduire les distances entre les hommes, mais également d’une classe à une autre.”\(^{79}\)

According to philosopher Pierre Musso, in *Télécommunications et Philosophie des Réseaux, la Postérité Paradoxalement de Saint-Simon* (1997), the disciples of Saint-Simon made the first step towards the end of politics and the beginning of what he calls a religion of communication:

> Alors que le politique n’est que détournement et cristallisation des flux sociaux : c’est pourquoi il faut le transformer, voire le supprimer, pour rétablir la fluidité de l’économie et de la religion de la communication. Dès son origine saint-simonienne, l’idéologie de la communication porte en elle la suppression du politique, comme la nuée, l’orage…Le renversement de toutes les

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hiérarchies, qu’elles soient religieuse, sociale ou institutionnelle, vaut mise au pouvoir de l’association, de la communication et de la communion. Le réseau symbolise définitivement—en acte et en représentation—le lien scelle entre ces éléments dans la religion saint-simonienne, modèle fondateur pour toute idéologie de la communication.  

To Musso, the disciples of Saint-Simon advocated the replacement of politics by technology: “La question sociale (réduire la distance entre classe) devient une question technique (créer des réseaux de communication). L’ingénieur devient l’artisan-leader de la transformation sociale.”  

1.9. The Popularization of Science: A Political Enterprise

It is not coincidental that it is in the nineteenth century that the word “vulgarization” appeared. Thanks to the decrease in newspapers’ prices and to a higher literacy rate, the press became accessible to a wider audience, which explains in part the multiplication of periodicals specialized in scientific vulgarization. In 1865, there are fifteen of them, such as Cosmos, L’Ami des Sciences, La Science Pour Tous, etc. This phenomenon contributed widely to the success of publishers such as Larousse, Flammarion and Hachette. On top of the educational reasons, there were economic ones explaining the multiplication of these publications. Very often, the same publication adapted itself to several types of audiences—children, educators, and industrials. Children’s books and periodicals about science were flourishing due partially to the success of Jean Macé and Jules Verne. Hetzel creates Le Magasin d’éducation et de recreation in 1864, a children’s periodical dedicated to science and

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81 Op. cit. p.191
incorporating elements of fiction, fantasy and the marvelous. Ornamented by illustrations, its success was exceptional. Louis Figuier, author of *Les Merveilles de la Science* (1867), also created albums presenting the inventions of each year: *L’Année Scientifique et Industrielle*, soon imitated by *L’Année Electrique, L’Année Industrielle* and *L’Année Technique*. Children’s books dedicated to science were best sellers, the most famous being *La Bibliothèque des Merveilles*, a series of books translated into Spanish, Portuguese and English, praised by the juries of the World Fairs and that sold 1,750,000 copies.

The point I want to underline is that it is not coincidental that the authors of these periodicals and books were involved in the Revolution of 1848 and replaced socialism by a “messianisme scientifique,” as expressed by Bernadette Bensaude-Vincent:

Un petit dictionnaire qui recense une trentaine de vulgarisateurs entre 1850 et 1914 permet de dégager le profil de ce nouveau personnage social. Un tiers d'entre eux, qui avaient débuté comme rédacteurs des rubriques scientifiques dans la presse générale et qui s'Etaient engagés dans la révolution de 1848, trouvent un refuge dans les magazines scientifiques après l'instauration de la censure de la presse sous le second empire. Victor Meunier, par exemple, et H. Le Couturier sont des socialistes convaincus qui allient et parfois confondent le messianisme scientifique avec la foi dans le socialisme universel. 84

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The belief in technology as a condition for the creation of a better society was also expressed by nineteenth-century politicians. The diffusion and popularization of science was also a way for them to unify and control the masses. An education in science was thought to diminish “social depravation” and political uprising by praising national scientific achievements. In England, philanthropists even created mechanics institutes, libraries and scientific conferences in order to educate and control factory workers. This idea was at the center of the discourse of Saint-Simonian politicians close to Napoleon III and guided the organization of the World Fairs. In particular, Frederic Le Play and Michel Chevalier truly believed that scientific progress and vulgarization would reconcile social classes.

Several socialist movements also emphasized scientific and humanistic education. For instance, Proudhon believed that a social revolution would take place only when the masses would a have a philosophical education. The intersection of politics and of the diffusion of science in the population is particularly central in the writings of journalist Victor Meunier, who believed that the vulgarization of science would lead to a new social order: “La science tend à la constitution d'une société nouvelle et cette tendance unanime des sciences s'exprime, si l'on veut, par ce mot : socialisme. Socialisme est le mot. Science est la chose.”

The diffusion of experimental science is also an important aspect of Auguste Comte’s positivist philosophy. As an alumnus of École Polytechnique, he taught for many years a public course about astronomy, a course open and accessible to anyone. He considered his *Cours de Philosophie Positive* to be a way to render science understandable to a wide audience and to educate the masses. To him, the diffusion of science was not only a philosophical duty capable of eradicating theological and

85 Meunier Qtd. in Bensaude-Vincent, 28.
ancient beliefs but also a political priority. This phenomenon will lead contemporary political scientist Lucien Sfez to talk about a “techno-discourse” omnipresent in today’s society.

1.10. Le “techno-politique” (Lucien Sfez)

This symbiosis is what political scientist Lucien Sfez calls “le techno-politique” in his essay *Technique et Idéologie, Un Enjeu de Pouvoir* (2002). While Heidegger and Habermas oppose in different ways the rationality of technology to language in general, Lucien Sfez claims that there is no technology without a discourse and that one is not more rational than the other. To Lucien Sfez, technological and political discourses are intertwined. Politics are legitimized by the rationality of science and, as such, science becomes political.

What legitimates politics and technology is not scientific expertise or experimentation but fiction. This point made by Sfez is crucial for my purposes. Political discourse is only efficient if based on a fiction such as “the Nation,” “Progress,” and “Humanity.” In this same way, technology ceases to be frightening or threatening if based on a “techno-discourse.” Politicians present their decisions as objective, determinist, and inevitable. The example of “Progress” is particularly relevant as the word serves as a political and technological utopia starting in the eighteenth century. The expression “on n’arrête pas le progrès” is utilized to justify numerous political decisions such as colonization, and ideologies such as capitalism.

1.11. The Concept of Non-modernity (Latour)

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It is true that the fusion between political and technical discourse had been announced by modern thinkers such as Humes, Hobbes and Machiavelli. Based on the idea of Progress as a new cult, political discourse is filled with technical vocabulary. Values such as Progress function as new myths. These myths remind us that technology does not necessarily correspond with modernity. Following Bruno Latour, Sfez claims that we have never been modern. Techno-discourses have an ideological and utopian dimension hidden behind the rationality of scientific practice.

To Bruno Latour, modernity disappeared along with the idea of the progress that constituted modernity. Politicians no longer govern without technicians, leading Latour to talk about the hybridity of decision making, of disciplines and of contemporary society in general. Instead of associating them, modern discourse used to separate technics and nature, scientific knowledge and politics. This discourse, considered to be modern and theorized by Max Weber among others, leads to what Latour calls a “grand partage” between objects; to him, we should rather analyze their interdependence. To Latour, this question should be approached from an anthropological perspective, as “pre-modern” societies did not separate technics from politics, nature from culture or myths from reason. However, Latour rejects the concepts of pre or post modernity: to him, we are “non-modern.”

The cult we devote to networks in the twentieth century is a prodigious example of the “non-modernity” theorized by Latour. In the second part of this chapter, we will be highly attentive to the discourse on the electrical and railway network in Zola’s novel as well as in the nineteenth-century press. Indeed, I will show that the cult of networks goes back to Saint-Simon and his disciples and argue that the

reading of Saint-Simon was highly influential on Zola. Indeed, Saint-Simon believed that transportation networks would transform politics and international relations by bringing nations closer and avoiding conflicts.

2. Utopian Networks

In *Travail*, transportation implies a stronger connection between men:

Demain, la navigation aérienne sera trouvée, l'homme aura conquis l’infini de l’espace, comme il avait conquis les océans. Demain, il pourra correspondre d’un bout de la terre à l’autre, sans fils ni câbles. La parole humaine, le geste humain feront le tour du monde, avec la rapidité foudroyante de l’éclair… Et, mon ami, c’est bien là cette délivrance des peuples par la science, la grande révolutionnaire invincible, qui leur apportera toujours plus de paix et de vérité. Déjà, depuis longtemps, vous avez comme défoncé les frontières, avec vos rails, vos voies ferrées, s’allongeant sans cesse, franchissant les fleuves, perçant les montagnes, ramassant toutes les nations ensemble, dans les mailles de plus en plus serrées et fraternelles de ce filet géant. […] l’humanité de demain se réconciliera… (232)

What is interesting to me in this quotation is the notion of network, illustrated in particular by the expression “les mailles de plus en plus serrées et fraternelles de ce filet géant.” Among the profuse usage of “network” in the twentieth century, we have tended to forget its original context: the fishing net. When looking at the history of the term, created in the sixteenth-century, it is interesting to notice that it evolved and extended its sense in 1839 from "net-like arrangement of threads, wires, etc.," and that the word also took the sense of "any complex, interlocking system (originally in
reference to transport by rivers, canals, and railways).”

While in the eighteenth century the metaphor of the network was used in medicine to describe blood and nerves in the human body, the word becomes more abstract in the nineteenth century: “La grande rupture qui fait advenir un nouveau concept de réseau à la charnière des dix-huitième et dix-neuvième siècles, c’est sa ‘sortie’ du corps. […] De naturel, le réseau devient artificiel. De donné, il devient construit. D’outil, il devient machine.”

As illustrated by Zola, it is indeed in the nineteenth century that the word acquired its current meaning, in reaction, I argue, to the Industrial Revolution and its new means of transportation. Zola’s quote also highlights the belief in the ability of science to reinforce peace, equality and fraternity around the globe. I will now show how the main progress of the Second Industrial Revolution, electricity, contributed to the utopian discourse on technology.

2.1 The Electrical Network

In *Travail*, scientific discoveries bring happiness to the inhabitants of the ideal city, the most important of those discoveries being electricity, developed by Jordan in the third part of the novel: “Aussi était-ce une première grande victoire, la Crèche éclairée à profusion, la force électrique en abondance aux grands et aux petits outils, le bien être augmenté, le travail facilité, la fortune élargie. Et c’était en somme un pas nouveau vers le bonheur” (142). This happiness applies not only to the inhabitants of La Crèche but it is universal: “L’électricité ne coûterait presque plus rien, nous pourrions la donner à tous, la répandre, en faire le victorieux agent du bien être universel” (142).

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This belief in a universal happiness is directly derived from the utopian thinkers read by Zola, Saint-Simon, Proudhon, and Fourier. Utopian fictions in general are ways to describe an ideal government or society that guarantees happiness for its members, as confirmed by scholar Raymond Trousson, author of *Sciences, Techniques et Utopies*: “La démarche utopique est avant tout quête de la société heureuse.”  

In *Travail*, the ideal society relies on electricity. The electrical cars are associated with joy: “La voitrette filait par les larges avenues, de son train si rapide et si doux. […] Cette matinée de fête ensoleillait tout, les routes étaient d’une gaîté sonnante, sous le beau soleil triomphal. D’autres voitrettes, en nombre infini, les parcouraient toutes pleines de chants et de rires” (173). The repetition of the word “sun” in the same sentence emphasizes the feeling of joy related to the electrical car, reinforced by the laughter and the songs. The infinite number of electrical cars underlines the impression of abundance and luxury generated by electricity. The electrical power also contributes to happiness in *La Crècherie* since it is thought to facilitate men’s work in factories. Each machine is so easy to use that they are described as a “jeu[x] d’enfant.” Children themselves could make them work. The example of electrical ovens is particularly relevant:

Toute une petite armée, les chargeurs veillant au gueulard, les fondeurs tapant sur le tampon, se cuisant aux flammes des coulées, n’étaient plus en perpétuelle alerte, à se succéder en équipe de jour et en équipe de nuit. Sur quinze mètres de long, sur cinq de large, la batterie des dix fours électriques, avec son trottoir roulant, tenait à l’aise, dans le grand hangar vitré, gai et

luisant, qui l’abritait. Et trois enfants auraient suffi, pour tout mettre en marche. (153)

The numbers mentioned reinforce the revolution represented by electricity: the working team goes from an army of men to three children.

Thanks to the new machines run with electricity, men work only four hours a day and suddenly gain access to free time and leisure, once only the privilege of the wealthy. Zola describes the new ways in which factory workers can spend their time in the new ideal city: “C’étaient des musées, des bibliothèques, des théâtres, des établissements de bains, de jeux [...] que la ville entière fréquentait aux heures de repos” (173).

In La Crècherie, electricity also produces jewelry, which is no longer a privilege accessible only to the upper class. Indeed, since money disappears from the ideal city, gold is accessible to everyone and electric ovens produce gold jewelry and precious stones for all:

Toute la population commençait à sortir, en clairs vêtements, parée des belles étoffes, si chères autrefois, mises aujourd’hui à la disposition de chacun. Des modes nouvelles, très simples dans leur magnificence, rendaient les femmes adorables. L’or depuis la disparition lente de la monnaie, était réservé aux seuls bijoux, chaque fille à sa naissance trouvait ses colliers, ses bracelets ses bagues, comme les gamins de jadis trouvaient des jouets. Cela n’avait plus de valeur, l’or devenait simplement de la beauté, de même que bientôt les fours électriques allaient produire les diamants et les pierres précieuses en une quantité incalculable, des sacs de rubis, d’émeraudes, de saphirs, de quoi en couvrir toutes les femmes. (238)
Luxury and pomp are common characteristics of utopias. In Rabelais’ Abbaye de Thelème, the members of the community wear only extravagantly elegant clothes that are made of silk, taffeta and velvet and ornamented with precious stones, silver and gold. The abbey itself is decorated only with silver and gold.

In *Travail*, electricity also produces new machines that increase productivity in factories. Electricity is associated with abundance since it makes machines run and provides humankind with everything it needs:

Grâce à elles, l’homme achevait de conquérir la nature, d’en faire sa dépendance et son paradis. Et de quelle prodigieuse richesse elles le comblaient, une abondance toujours croissante des fleurs et des fruits de la terre, un luxe de plus en plus grand des objets manufacturés, chaque citoyen regorgeant de tous les biens, vivant en prince de ses quelques heures de travail, lui que la faim étranglait autrefois, après d’abominables corvées de dix heures.

Abundance is a trait commonly found in traditional utopias, from the Golden Age to the Pays de Cocagnes. Literature contains many examples of utopias in which nature provides copiously everything men need. In the Golden Age, Hesiod evokes the countless gifts offered by nature: “Tous les biens étaient à eux : le sol fécond produisait de lui-même une abondante et généreuse récolte, et eux, dans la joie et la paix, vivaient de leurs champs, au milieu de biens sans nombre.”

Abundance almost reaches a climax in Rabelais’s abbaye de Thelème:

Pour le bâtiment et assortiment de l'abbaye, Gargantua fit livrer de content vingt et sept cent mille huit cent trente et un moutons à la grand laine, et par

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chacun an, jusqu'à ce que le tout fût parfait, assigna, sus la recette de la Dive, seize cent soixante et neuf mille écus au soleil, et autant à l'estoille poussinière. Pour la fondation et entretenement d’icelle, donna à perpetuité vingt trois cent soixante neuf mille cinq cents quatorze nobles à la rose de rente foncière, indemnis, amortis, et solvables par chacun an à la porte de l’abbaye, et de ce leur passa belles lettres.⁹²

The abundance is shown by the numbers, their enumeration as well as the eternal renewal of the sums necessary to maintain the abbey.

In Zola’s utopia, there is such abundance that nature produces too much:

C’étaient d’immenses granges, d’immenses greniers, d’immenses salles de réserve, où toute la production, toute la richesse de la cité s’entassait. Chaque année, il avait fallu les agrandir, on ne savait plus où mettre les récoltes, on avait dû même ralentir la production des objets fabriqués, pour qu’un encombrement ne se produisît pas. Et nulle autre part, on ne sentait mieux l’incalculable fortune dont un peuple était capable, lorsque disparaissait les intermédiaires, les oisifs et les voleurs, tous ceux qui vivaient jadis du travail d’autrui, sans rien produire eux-mêmes. La nation entière au travail, avec sa tâche de quatre heures par jour, amoncelait une richesse si prodigieuse, que chaque habitant regorgeait de tous les biens, satisfait tous les désirs, ignorant désormais de l’envie, de la haine et du crime. (177)

The repetition of “immense” and “toute/tous” (“toute la production, toute la richesse,” “tous les biens, tous les désirs”) introduces the hyperbolic dimension of this passage and reinforces the impression of abundance in the ideal city. The expression “nulle

part on ne sentait mieux” also emphasizes the singularity of the utopian space and is commonly found in utopias, such as Gargantua, in which Rabelais describes the inhabitants of Thélème as unique: “Jamais ne feurent veuz chevaliers tant preux, tant gualans, tant dextres à pied et à cheval, plus vers, mieulx remuans, mieulx manians tous bastons, que là estoient, jamais ne feurent veues dames tant propres […]”\textsuperscript{93}. Like with “nulle part,” the repetition of “jamais ne furent vus” emphasizes the exceptional characteristics of the utopia.

Thanks to electricity, men work less and can retire early: in la Crêcherie, they stop working at the age of forty: “Les machines, ennemies d’autrefois, étaient devenues les esclaves dociles, chargées des gros efforts. À quarante ans, le citoyen avait payé sa dette de travailleur à la Cité” (256). Even though hard work is praised by Zola, the novel emphasizes the importance of leisure, as do most of the utopias, such as “Le Pays de Cocagne” in which life revolves around pleasure and work does not exist.

Electricity is also a way to dominate nature and to fulfill a Promethean fantasy: “En physique, en matière d’électricité surtout, les inventions continuaient à reculer les bornes du possible, donnaient aux hommes la toute-puissance des dieux, sachant tout, voyant tout, pouvant tout” (190). Jordan even wishes to create an electrical sun, which Luc encourages him to do in order to “ravir le feu sacré, la divine flamme” (165). Techno-utopian novels of the late nineteenth century often refer to Prometheus to describe the discovery of electricity and humanity’s domination of nature. For instance, in L’Ève Future, Villiers frequently compares Thomas Edison to Prometheus.

\textsuperscript{93} Rabelais, \textit{op.cit.} p. 475
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Bonnaire considers electricity as the source of human happiness: “elle est la nature domptée, la foudre asservie, dont notre bonheur est fait” (122). The same affirmation can be found in Verité: “la foudre, force naturelle qui sera la source du bonheur, lorsque l’homme l’aura domestiquée”.94

2.2 Networks and Equality

Electricity is the source of happiness because it is considered as a factor of social progress and equality. To Jordan, it is “le sang de la vie sociale” (142) and everyone should have access to it. Here it is science, not only politics, that conditions equality in Zola’s utopia. The electrical network, by easing workers’ pain, contributes to the disintegration of social classes in La Crècherie. By working only four hours a day and retiring at the age of forty, men have access to leisure, free time, studies and culture, which were formerly the privilege of the bourgeoisie and the aristocracy. In La Crècherie, members of the community can do research in the laboratories, go to the theater or the museum built by Luc and stroll through the numerous parks of the “cité heureuse”: “Les jouissances réservées jadis aux rares privilégiés (...) étaient aujourd’hui le luxe de tous. (...) C’étaient des musées, des bibliothèques, des théâtres, des établissements de bains, de jeux, de divertissements (...) que la ville entière fréquentait aux heures de repos” (172). All the machines run on electricity are accessible to everyone in La Crècherie. For instance, all the inhabitants can drive an electrical car: “une petite voiture électrique à deux places attendait. Il y en avait de pareilles à la disposition de tous” (173).

2.3 Networks and Peace

94 Œuvres complètes, vol.8, op.cit, p. 1466
The second network that embodies Zola’s technological utopia is the railway network. Despite the absence of actual trains in Beauclair, the factories’ main production is the rail. In the novel, the railway network is thought to bring universal peace. In the nineteenth century, it was indeed often imagined that trains would connect men and nations and contribute to the diminution of wars.

In *Travail*, it is no coincidence that l’Abîme produces weapons while La Crêcherie produces rails, as the former are used in war while the latter bring nations closer. The first part of the novel describing the decadence of l’Abîme functions as a dystopia, in opposition to the last part, the utopia characterized by Zola himself as “la partie utopique, la contrepartie du livre premier.” Traditionally, most utopias are defined by concord while dystopias are marked by discord. In More’s Utopia, war is shameful: “Les Utopiens ont la guerre en abomination, comme une chose brutalement animale, et que l’homme néanmoins commet plus fréquemment qu’aucune espèce de bête féroce. Contrairement aux mœurs de presque toutes les nations, rien de si honteux, en Utopie, que de chercher la gloire sur les champs de bataille.” Zola draws a parallel between peace and the railway: “L’argent de la France allait surtout aux constructions de paix et de solidarité sociale, aux chemins de fer, aux ponts, aux bâtiments de tous genres, où le fer et l’acier triomphaient” (119). Bridges and trains did, indeed, bring men closer, from which a discourse on pacification emerged. Steel is also considered by Zola as “the source of justice and peace”:

On produisit dès lors des fers et des aciers, *si bon compte et d’une qualité si belle*, que l’Abîme fut menacé même dans sa fabrication des objets fins, de prix élevé. *Toute* concurrence devenait impossible. Puis, il y eut encore la *grande* poussée démocratique qui *partout multipliait* les voies de communication l’extension *sans fin* des chemins de fer, la construction déculpée de ponts, de bâtiments, de villes entières où les fers et les aciers

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95 Zola quoted in Mitterand, Henri (ed.), *Oeuvres Complètes*, op.cit, p.689.
étaient employés en une proportion prodigieuse, sans cesse croissante. Depuis les premiers Vulcains qui avaient fondu le fer dans un trou, pour en forger des armes, et se défendre, et conquérir la royauté des êtres et des choses, l’emploi du fer n’avait fait que s’élargir, le fer finirait par être demain la source de la justice et de la paix, lorsque la science l’aurait définitivement conquis, en le produisant presque pour rien, en le pliant à tous les usages. (112, my italics)

This quote demonstrates a parallel between politics and science by linking democracy to the production of trains. It is science that will contribute to the creation of the ideal political system. The perfection of this future techno-utopia is reinforced by the hyperbolic dimension of this description through the repetition of “si” (“si bon compte,” “qualité si belle”). Zola also gives a universal dimension to the development of steel by emphasizing the fact that it is everywhere (“partout”) and by expressing the gradation of the production through verbs such as “multiplier” and “s’élargir,” as well as expressions such as “sans cesse” and “sans fin.”

The press and essays published at the turn of the century also reflect this belief in the railway network as a source of universal peace. With the creation of the Orient Express, a utopian discourse flourished: “L’Orient-Express, qui circule au milieu de nous comme un sang depuis longtemps familier, a, pour ainsi dire vivifié, les premiers pas de ce pays ! […] Et, devant ce pays, dont la jeunesse vivante vous doit un lien de plus entre elle et toutes les graves maturités […] vous pouvez désormais, messieurs, être fiers d’avoir participé, à notre pacifique développement !”

This abstract from Ferdinand I’s speech was pronounced at the inauguration of the train in Sofia, Bulgaria. In his travel narrative on the Orient Express, novelist Frédéric Béchard expressed his belief in the end of conflicts between nations thanks to the railway: “Les races se croisent comme se relient entre eux les chemins de fer qui sillonnent le sol sur lequel elles se sont si longtemps fait la guerre […] La suppression des distances a

97 “Discours de Ferdinand l’er de Bulgarie”, “Une Fête à Sofia”, Le Figaro, 8 Juillet 1908.
The notion of fraternity is also traditionally central in utopias and contributes to the peace that reigns in ideal communities. The citizens of utopian communities are usually considered as members of a family. The term is recurrently mentioned in *Travail*, such as when the members of La Crecherie celebrate labor day: “C’était comme une communion fraternelle de la Cité entière, on rompait le pain et l’on buvait le vin publiquement, les tables finissaient par se rapprocher, ne faisaient plus qu’une table, changeaient la ville en une immense salle de festin, où le peuple devenait une seule et même famille” (298). The fraternity that makes the city of Beauclair resemble a family exemplifies a utopia that was thought to invade the whole globe. The utopian thinkers who inspired Zola wished to establish a new fraternal society thanks to transportation systems.

2.4 “Retiologie”: the Ideology of Networks in the Writings of Saint-Simon

This conception of networks as a new vector of utopias, I argue, is directly derived from Zola’s reading of Saint-Simon. Before writing *les Trois villes* et *les Quatre Evangiles*, Zola used extensive documentation and visited Unieux’s factories. Most of his research came from *Le Grand Dictionnaire Universel du XIXeme siècle*, in which he consulted articles on Saint-Simon and his disciples, who were particularly interested in the development of the railway network. Saint-Simon himself, in the *Industrial System*, expresses his desire to see a scientific elite transforming the French territory through the implementation of a new transportation system, which, he claims,

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will lead to industrialization and pacification. His disciples are the ones who will mostly theorize a utopia based on transportation.

Michel Chevalier, Saint-Simonian economist, presented Saint-Simon’s program in a series of articles published in *Le Globe* in 1832: “Les Chemins de fer le long desquels les hommes et les produits peuvent se mouvoir avec une vitesse qu’il y a vingt ans on aurait jugée fabuleuse, multiplieront singulièrement les rapports des peuples et des cités. Dans l’ordre matériel, le chemin de fer est le symbole le plus parfait de l’association universelle.” These articles, later published in *Le système de la Méditerranée*, illustrate his desire to connect eastern and western countries. In 1838, in *Des Intérêts Matériels de la France*, he introduces his plan to transform the French landscape, based on the American and British transportation systems. Even though, he wishes to improve roads, navigation and ports, he mostly focuses on the railway, considered by him to be the main instrument of pacification between nations, such as between France and England, nations that he wishes to connect with a tunnel: “moyennant le chemin de fer de Paris à Londres, l’alliance des deux peuples sera intime et indissoluble.”

But one of the most renowned disciples of Saint-Simon was Barthélemy Prosper Enfantin, the entrepreneur who developed the railway system as well as the idea of the Suez Canal, and founded “L’union pour les chemins de fer de Paris à Lyon” in 1845. Many Saint-Simonian engineers and bankers are indeed involved in the creation and funding of the railway system in France. Many of their dreams were

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99 The French newspaper *Le Globe* was bought by the Saint-Simonists in 1830, and was the official voice of the movement under the July Monarchy.


fulfilled decades after the end of their movement, in the form of the Panama Canal, the Parisian metro and the Channel Tunnel.

2.5 The Information Highways of the Twentieth Century

Inspired by Saint-Simonians, many utopian thinkers express their interest in railway and road networks. Nathalie Montel, in her article on transportation in the *Dictionnaire des Utopies*, identifies three main themes in their writings. They are mobility, internationalism and the notion of the *network*:

L’accent mis sur les transports rejoint enfin un imaginaire du réseau qui constitue l’un des traits saillants de nombreuses utopies technologiques des dix-neuvième et vingtième siècles, l’appartenance sociale devenant synonyme de connexion. L’intérêt voué aux infrastructures de transports fraye ainsi la voie aux utopies de la communication universelle qui se cristallisent aujourd’hui autour de l’internet.102

Indeed, we will see in chapter 4 that this utopia of the network can be found in the writings of the founders and promoters of the World Wide Web at the end of the twentieth century. The discourse on the metaphor of the information highway in particular resembles astonishingly Saint-Simon’s theories. This discourse went beyond the French borders and became a long-lasting and universal utopia.

2.6 Zola at the World Fair of 1900: the Birth of a Universal Utopia

The utopian networks went beyond Zola and Saint-Simon’s writings: it was a widespread idea expressed by the press, pictorial art and public events such as the

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World Fairs which vastly contributed to the diffusion of the utopia. Journalist Paul Adam in *Le Transcontinental* draws a parallel between the production of goods exposed at the fair and universal peace:

Essentiellement, les Expositions universelles sont les galas de la paix. A leur date et pour quelques semaines du moins, les peuples, dont les haines historiques ordinairement se guettent, fraternisent [...] Alors que toutes les fêtes publiques marquent le souvenir de victoires guerrières, de convulsions sociales et la suprématie du destructeur, celle-ci consacre la suprématie du producteur [...] Que les mains se tendent ! Que les bouches s’acclament ! Que les frontières disparaissent ! Voilà ce que désirent obstinément les peuples d’Europe.103

Rather than generating war, technology was thought to unite all European nations, nations that would “hold hands” because men are all producers. It is while visiting the World Fair in 1900 that Zola wrote *Travail*, published the following year. It is therefore no coincidence that electricity plays such a crucial role in Zola’s novel. Zola had always been attentive to technological progress. In 1860, in a letter he wrote to Jean-Baptistin Baille, he expressed his enthusiasm:

Ce qui caractérise notre temps, c’est cette fougue, cette activité dévorante; activité dans les sciences, activité dans le commerce, dans les arts, partout: les chemins de fer, l’électricité appliquée à la télégraphie, la vapeur faisant mouvoir les navires, l’aérostat s’élevant dans les airs. [...] Le monde se

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precipite donc dans un sentier de l’avenir, courant et pressé de voir ce qui l’attend au bout de sa course.\textsuperscript{104}

Through the lexical fields of speed and movement, Zola expresses here the dizzying pace of the late nineteenth-century technology that will inspire his novels such as \textit{La Bête Humaine} and \textit{Travail}. Indeed, he sees the world \textit{running} and \textit{rushing} towards the future. In 1860, in a press article,\textsuperscript{105} Zola also advocated for the possibility of writers to associate art and technology, denying the habitual division of the two. To him, machines could become characters in literature, which would be the case in \textit{La Bête Humaine}, in which the train is personified, gendered female and eroticized. Fascinated by technology, Zola was thus very enthusiastic about the World Fairs.

In 1900, Zola had been asked to write an article on the universal exhibition but refused, leaving us without any testimony of his impressions. However, his daughter Denise remembers how much time his father liked spending at the exhibitions with her and her brother: “Nous y passions des heures. Mon père regardait, écoutait, visiblement intéressé ; moi j’avoue que ces masses de fer, de roues, tournant dans un vacarme indescriptible, ne m’amusaient pas du tout.”\textsuperscript{106} But, most importantly, Zola’s fascination is illustrated by the numerous photographs he took during the exhibition, such as a picture of the moving sidewalk, one of the main attractions. His most famous photograph represents the Eiffel tower at night with the Palace of Electricity in the background (see fig. 2).

Fig. 2. Zola, Émile. *La tour Eiffel de nuit*. 1900. Musée Emile Zola, Médan.

Fig. 3. Zola, Émile. *Le Château d’Eau et le Palais de l’électricité*. 1900. Musée Emile Zola, Médan.
The first illumination of La Crêcherie could be interpreted as the result of Zola’s visit to the World Fair, during which electricity was celebrated by Paris:

Quand la nuit fut noire, l’usine entière s’embrasa, des milliers de lampes l’inondèrent d’une gaie clarté de plein jour. […] Jordan, que Soeurette avait enveloppé dans une couverture, par crainte de la fraîcheur du soir, regardait toujours l’usine immense étinceler comme un palais de féerie (…) Il s’émerveillait du succès de cette œuvre dont il était l’artisan le plus ignoré et le plus actif. (142)

As Zola’s ideal city, the electrical palace of the World Fair (see fig. 3) was often compared to a castle in a fairy tale.107 Paris was just starting to be lit by electricity in 1900 which revolutionized the Parisian landscape. For example, it is in 1900 that the Eiffel Tower, formerly lit by gas, started using electricity thanks to the installation of 5,000 light bulbs.

At the time, it seemed like electricity was opening the door to a whole new world, a new perception of urban landscape. In L’Eve Future (1886), the apparition of electricity is compared to the “Let there be light” of the Bible. Indeed, the chapter describing electricity is entitled “Fiat Lux” and the same reference can be found in the text: “N’est-elle pas de vous, cette lumière merveilleuse? On dirait une après-midi d’été ! […] C’est un Fiat Lux! que vous avez dû prononcer tout à l’heure !” (Villiers, 70). Villiers expresses here the astonishment that electricity generated at the time. Thus, Zola’s ideal city seems all the more new in that it really is when lit by electricity.

107 See chapter 2.
2.7 Electricity and the World Fair of 1900

The celebration of electricity and electricians such as Thomas Edison in *L'Ève Future*[^108] is inscribed in the historical context of the World Fairs of the nineteenth century. Prowess in electricity was represented at the universal exhibitions of 1878, 1889[^109] and 1900. At the exhibition of 1900, the building presenting industrial innovations contained an electrical palace, where visitors could admire new inventions such as the moving sidewalk or the telephone. By picking up the phone, visitors could listen to a symphony played simultaneously at the Opera Garnier.

The Palace of Electricity represented, according to writer Albert Quantin, "l’apothéose de l’electricité."[^110] Paris is “la ville lumière,” which is also the title of a novel written in 1904 by Camille Mauclair, also inspired by the exhibition. The palace was illuminated by thousands of light bulbs[^111] which represented a revolution in the urban landscape of a city that will remain mostly lit by gas until the 1920’s.

The increase in the number of visitors to the World Fairs throughout the century reflects the increasing popular fascination with technology at the turn of the century. The World Fair attracted fifty-one million people in a country that had only forty-one million inhabitants. In addition, it was more than the exhibition of 1889 and its thirty-two million visitors, or the fair of 1887 that was toured by sixteen million people. It is ten times more than that of 1855 with its five million visitors.

In 1900, the exhibition— the biggest ever organized in Paris— revolved around technology. Nearly all the attractions were based on it: transportation (the moving

[^108]: See chapter 2
[^109]: See also chapter 2
sidewalk, train stations, the metro), movie screenings, electrical lighting, the Great Paris Exhibition telescope and the *Globe Céleste*. These last two attractions were built for scientific vulgarization only and not for scientific use.

Electricity is what fascinates the most and powers the telegraph, trains, and the telephone, among other “new technologies.” Nine-hundred thousand visitors had already come to the international exhibition of electricity in 1881, which is negligible compared to the crowd gathered at the fair of 1900. Electrical power had evolved, which made it the main attraction of the World Fair of 1900. The writer Paul Morand recalled his impression while visiting the exhibition as a child:

C’est alors que retentit un rire étrange, crépitant, condensé : celui de la Fée Electricité. Autant que la morphine dans les boudoirs de 1900, elle triomphe à l’Exposition ; elle naît du ciel, comme les vrais rois. […] elle guérit tout, l’Electricité, même les névroses à la mode. Elle est le progrès, la poésie des humbles et des riches ; elle prodigue l’illumination ; […] Les ministères de la rive gauche eux-mêmes ont l’air de Loïe Fuller. La nuit, des phares balaient le Champ de Mars, le château d’eau ruisselle de couleurs cyclamen ; ce ne sont que retombées vertes, jets orchidée, nénuphars de flammes, orchestrations du feu liquide, débauches de volts et d’ampères. La Seine est violette, gorge de pigeon, sang de bœuf. L’Electricité on l’accumule, on la condense, on la transforme, on la met en bouteilles, on la tend en fils, on l’enroule en bobines, puis on la décharge dans l’eau, sur les fontaines, on l’émancipe sur les toits, on la déchaîne dans les arbres ; c’est le fléau, la religion de 1900.112

What is interesting in this is the comparison of electricity to a fairy.\textsuperscript{113} As Zola demonstrates in his novel, it carries a promise of comfort and social equality for the rich and poor; it is “la poésie des humbles et des riches.” Electricity is considered to bring happiness and to solve problems as it can “heal everything.” Lastly, the quote emphasizes the control over nature represented by the discovery of electricity through the anaphoric repetition of “on la”: “on la condense, on la transforme, on la met en bouteilles.”

However, most importantly, Paul Morand provides an example of the numerous texts comparing technology (here electricity) to a religion. There was indeed a cult devoted to this new technology, “the religion of 1900.”\textsuperscript{114}

3. “Technolatry,” the Religion of Technology

3.1. Saint-Simon and the Religion of Communication

We owe the term “technolâtrie”\textsuperscript{115} to Jacques Noiray, who, in \textit{Le Romancier et la Machine}, underscores Zola’s devotion to technology. Science is, indeed, Beauclair’s religion, and machines are his idols.

Zola’s portrayal of science as a new dogma is, I will argue, inspired by Saint-Simon’s discourse. Saint-Simon advocates for the replacement of the abstract idea of God with Newton’s law of Universal Gravitation, which will be the new basis of social relations. In \textit{Le Nouveau Christianisme}, Saint-Simon attempts to create a new,

\textsuperscript{113} See chapter 2.
\textsuperscript{114} Morand, Paul, \textit{op.cit.}
industrial religion that all men would share. Based on the same values as Christianity, Saint-Simon envisions the addition of several new principles. In his religion, industry, arts and science become the three sacred forms of knowledge. Heaven on earth is imminent since, through hard work and control over nature, men will satisfy their material and spiritual needs in a society that will guarantee happiness, freedom, and peace.

Saint-Simon was not the only nineteenth-century thinker advocating for a new religion of science. His disciple, Auguste Comte, will go even further by creating a secular church in charge of promoting the values of science and positivism. This Positivist Church mostly existed in Brazil where a Positivist temple was erected in 1881 by two philosophers. In France was erected “le Temple de l’Humanité.” However, as demonstrated by the success of the World’s Fairs and by scientific publications, the cult devoted to science penetrated mentalities through various media and by other subtle vectors, dominating the Machine Age. Zola’s novel provides an excellent illustration of this “technolatry.”

3.2. Christianity in Zola’s Novel

One of the most salient signs of the advent of Auguste Comte or Saint-Simon’s new religion is in the portrayal of the dissolution of Christianity in Zola’s novel. As Saint-Simon wishes for the Catholic Church to come to an end in Le Nouveau Christianisme, Zola devotes a long passage to the collapse of a church, which literally falls down, killing the priest. To Zola, it is an allegory representing a religion associated with death. A park is created on the site of the old church: “Et dans ce jardin délicieux, où dormait la poussière d’une religion de misère et de mort, poussait...”

maintenant l’allégresse humaine, la débordante floraison de la vie” (167). In this sentence, religion represents death and misery, while the new park is connected to opposite notions: life and joy. Religion is also reduced to dust, symbolizing the end of what Luc considers to be the old society.

In his new city, Luc does not build a church. Before the priest’s death, he had asked Luc why he had not built a place of worship:

- Prétendez-vous donc vivre sans Dieu ? Jusqu’ici, aucun État n’a pu s’en passer, une religion a toujours été nécessaire au gouvernement des hommes.
- Je ne prétends rien du tout, répondit Luc. Chaque homme est libre de sa foi, et si une église n’a pas été bâtie, c’est qu’aucun de nous ne s’en est encore senti le besoin. […] Voyez-vous, monsieur l’abbé, ce n’est pas nous qui détruisons le catholicisme, il se détruit lui-même, il meurt lentement de sa belle mort, comme meurent nécessairement les religions, après avoir accompli leur tâche historique, à l’heure marquée par l’évolution humaine. La science abolit un à un tous les dogmes, la religion de l’humanité est née et va conquérir le monde. À quoi bon une église catholique à la Crêcherie, puisque la vôtre est déjà trop grande pour Beauclair, qu’elle devient de plus en plus déserte et qu’elle s’écroulera un de ces jours ? (92)

What is interesting for my purposes in this quote is the role given to science. Thanks to science, men will cease to believe in dogmas and, instead, they create a new religion, “la religion de l’humanité.” This new religion is science, as expressed by Zola throughout the novel. Before the church collapses, the priest himself realizes that
science has triumphed and his religion is dying: “Il avait eu beau se réfugier dans la lettre stricte du dogme, pour ne rien accorder aux vérités de la science dont il sentait le suprême assaut vainqueur en train de détruire le séculaire édifice du catholicisme” (167).

In La Crécherie, the institution of marriage exists but Luc praises the choice of couples who live together without getting married. In the new city, all the schools are coed. Religions as well as the notion of sin disappear in Luc’s ideal city:

Au lieu de l’imbécile imagination du péché originel de l’homme mauvais qu’un Dieu d’illogisme punit et doit sauver à chaque pas, entre la menace d’un enfer enfantin et la promesse d’un paradis menteur, il n’y avait plus que l’évolution naturelle d’une espèce d’êtres supérieurs, simplement en lutte contre les forces de la nature, et qui les vaincront, qui les soumettront pour leur bonheur, le jour où, cessant leur guerre fratricide, ils vivront en frères tout-puissants, après avoir douloureusement conquis la vérité la justice et la paix.

(160)

Since sins don’t exist in Luc’s new city, the notion of Original Sin seems imaginary and idiotic. The only entity that men should fear is nature, which, thanks to science, they can now dominate, realizing Descartes’ desire to become “maîtres et possesseurs de la nature.”

Despite Zola’s diatribe against it, the nineteenth-century Catholic Church was not opposed to technological discoveries and was even involved in the new cult devoted to technology. The Catholic establishment often supported technological progress. French historian Michel Lagrée, in his book entitled La bénédiction de
Prométhée: Religion et Technologie,\textsuperscript{117} gives numerous examples of priests’ involvement in this cult. Many of them organized blessing ceremonies for train stations, steamboats, and bridges. To the author, it was a sort of Saint-Simonian Catholicism.

Already in 1855, during the Universal Exhibition, Catholics were celebrating French technological prowess, what Catholic writer Leon Plée called “la sainte alliance des peuples” in an article published in Le Siècle on November 1\textsuperscript{st}, 1854.\textsuperscript{118} To him, the exhibition was the celebration of a new religion under a new God, “dieu de Kant, dieu des nations réunies un jour, dieu du progrès.”\textsuperscript{119} Thus, the new religion of science was not in opposition to the Catholic Church.

3.3 Machines and Fetishes

In philosophy and anthropology, fetishism designates the affectivity invested in a symbolic object to which people attribute a hyperbolic efficiency and impact on reality. Etymologically, the word “fetish” comes from the Portuguese term “feitiço,” which means “artificial.” The connotation implies that a fetish is something crafted and fake.\textsuperscript{120} The Portuguese employed this term in the early modern period during the colonization of Africa to designate the objects of cult in the different cultures they described. It was thus a word employed to qualify a non-western practice.

It is not coincidental that the word “artificial” is recurrent in nineteenth-century discourse on technology. Nineteenth-century science generated a reflection on the notions of reality and artificiality. Machines were artificial and symbolic objects whose potential impact on reality was exaggerated. In L’Ève Future (1886), for

\textsuperscript{118} Qtd. in Lagrée, 2
\textsuperscript{119} Qtd. in Lagrée, 3
instance, Villiers often refers to the difference between reality and artificiality: “La GENERATION ARTIFICIELLE (déjà tout à fait en vogue depuis ces derniers temps), me paraît devoir combler les vœux secrets de notre espèce, avant un siècle” (175). The machine woman, Hadaly, is a fetish compared to the statue of Venus by Antonio Canova. She is also the replica of a real woman, Alicia. Hadaly is qualified as “artificial” and superior to Alicia, who is only “real.” The artificial woman becomes more real than the model: “La fausse Alicia semblait donc plus naturelle que la vraie” (308). Reality is thus inferior to the artifacts produced by science and technology: “prétendue réalité, l’antique dupeuse” (136). The artificial woman is also compared not to a fetish but to a goddess because she is the copy of a human, but one could consider her as a fetish since she is also a machine.

She is an android or cyborg and, as such, I would argue that Hadaly is a fetish. From Frankenstein to L’Eve Future, machines became so immersed in fiction that they are considered characters. The long digressions of Villiers on the status of artifacts and reality make technology and the fée électricité into characters of the novel. Lucien Sfez calls this phenomenon a “discours de l’objet”: “Que la fiction de la technique nous séduise, cela ne fait aucun doute : nous n’avons qu’à prendre la mesure de nos nouveaux fétiches, de l’engouement qu’ils suscitent et des discours pléthoriques qui les accompagnent comme autant de contes merveilleux […] D’objets du discours, la technique devient alors discours de l’objet.”

Bruno Latour calls this fetishism a “parlement des choses” [parliament of things].

Zola’s novel, in which machines are new fetishes, exemplifies the religion or superstition of technology. When Luc and his wife Josine have to choose a venue for
Nanet and Nise’s wedding, they decide to organize the ceremony in a foundry full of machines that are decorated for the occasion:

Aussi laisse-t-on l’outillage en place car on n’aurait pu imaginer, pour cette cérémonie du travail triomphant, un décor plus beau que ces outils géants, dressant leur profil aux lignes puissantes, d’une beauté souveraine, faite de logique, de force et de certitude. Seulement, on les orna de feuillage, on les couronna de fleurs, en hommage, ainsi que les anciens autels. Les murs de brique furent décorés de guirlandes, on sema les dalles du sol de roses et de genets effeuillés. C’était comme la floraison même de l’effort humain, tout le séculaire effort vers le bonheur qui finissait par fleurir là. (140)

Machines are described here as pieces of art, considered as beautiful and, above all, placed on altars as fetishes decorated for the occasion. But the most salient aspect of the description is the superiority that they seem to have over the men who devote a cult to the machines, described as giant, powerful and strong.

When the couple exchanges their vows, the factory is then compared to a cathedral, which gives the reader the impression that, in La Crêcherie, science is the religion, factories are cathedrals, electricity is a goddess and machines are idols.

The ceremony is followed by a dance, during which the dancing procession parades through the different rooms of the factory and around the machines: “Et la ronde de noce allait et venait autour des grands outils, les presses colossales, les formidables marteaux-pilons, les raboteuses géantes, d’aspect souriant sous leur décor de feuillages et de fleurs” (141). The adjectives reinforce the hyperbolic dimension of

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the description, as is often the case in utopias. But, whereas in traditional utopias gardens are depicted as vast and marvelous, in Zola’s novel machines are “formidables” and “grandes.” The adjectives “colossales” and “géantes” give a supernatural dimension to the description of machines as giants are usually found in fairy tales, legends and myths. Lastly, the description the machines are associated with happiness since they liberate men from painful labor.

Most importantly, machines have days devoted to their celebration: labor days, celebrated four times a year, at the beginning of each season, giving the impression that machines were part of nature. As idols, machines cease to be objects and begin to be personified: “Il en était qui avaient des jambes, des bras, des pieds, des mains, pour marcher, pour embrasser, pour étreindre et manier le métal, avec des doigts souples, agiles et forts” (176).

During those labor days, machines are also decorated, as if men were giving offerings:

Les travailleurs étaient venus, des bandes de jeunes hommes et de jeunes filles, pour enguirlander ces machines de verdures et de roses. N’étaient-elles pas de la fête? On fêtait bien les fêter elles aussi, ces puissantes ouvrières, si douces, si dociles, qui soulageaient les hommes et les bêtes. Et rien n’était plus attendrissant et plus gai. Ces roses dont s’ornaient les presses, les marteaux énormes, les raboteuses géantes, les grands tours, les grands laminiers, disaient combien le travail était devenu attrayant, un bien être du corps, une joie de l’esprit. Des chants retentissaient, des rondes se formaient, au milieu des rires, toute une farandole qui, peu à peu, gagnait d’une halle à
l’autre et finissait par changer l’usine en un immense lieu de réjouissance. (176)

Even though they are not androids as Hadaly in *L’Eve Future*, machines are here *personified* and considered characters in the novel. The gender of the French word machines enables the author to feminize machines, characterized as gentle and decorated with flowers. But, most importantly, they are celebrated because men owe them their comfort and happiness. The factory becomes “un immense lieu de réjouissance,” dedicated to pleasure and joy, as if machines were leading men to paradise. Zola even draws a parallel between nature transformed by machines and heaven: “Grâce à elles, l’homme achevait de conquérir la nature, d’en faire sa dépendance et son paradis” (190).

3.4. “Faitiches” (Bruno Latour)

When considering the origins of the word “fetish,” it is clear that it referred to a non-Western and non-modern object. The word was created by the Europeans during the colonization of Africa. However, a Western equivalent to fetish objects existed: *icons*. What is the difference then between icons and fetishes? While icons are often images, fetishes are objects. However, monotheistic religions have objects of devotions, such as rosaries or statues of the Virgin Mary in the “culte marial” of Christianity.

Fetishes today evoke magical objects producing spells and curses. We thus went from considering the fetish as artifact, a man-made object, to seeing as a magical symbol. The term has acquired a negative connotation. Ludwig Feuerbach, in
L’Essence du Christianisme,\textsuperscript{124} claims that all new religions consider the divinities of other religions as idols or fetishes. Each new religion considers the others as mere superstition.

The association of machines and fetishes perfectly illustrates Bruno Latour’s parallel between “faits” and “fetiches.” To him, these two French words have the same etymology and should not be opposed, as they are in the traditional modern dichotomy between reason and belief; hence the creation of the word “faitiche” by Latour.\textsuperscript{125}

Historian Jacques Ellul also criticizes the reign of “facts” in contemporary society and attributes it to the rise of scientific faith:

Sans aucun doute, le motif le plus puissant qui pèse sur nous comme un interdit, le motif qui nous empêche de remettre en question les structures de cette civilisation et de nous lancer dans la voie de la révolution nécessaire, c’est le respect du fait. (...) Actuellement, le fait constitue la raison dernière, le critère de vérité. Il n’y a pas de jugement à porter sur lui, estime-t-on, il n’y a qu’à s’incliner. Et dès lors que la technique, l’État ou la production sont des faits, il convient de s’en accommoder. Nous avons là le nœud de la véritable religion moderne : la religion du fait acquis.\textsuperscript{126}

Following Ellul and Latour’s definition, I claim that machines are new “faitiches.” The cult of machines as fetishes could thus be considered not as a new religion but as an “other” belief, all the more perilous that it is insidious. As I have


demonstrated, techno-utopianism is a new cult that has its statues, saints and temples: the goddess of Progress on paintings, the Palace of Electricity and the Galerie des machines at the World Fair of 1900.

3.5. The Goddess Electricity

In Zola’s novel, there isn’t a god but a goddess, Electricity. As mentioned earlier, the utopia of Travail is based on science as it changes the lives of workers, enabling Luc to remodel society.

As the main invention of the second Industrial Revolution, electricity is the object of an unprecedented cult. It was the case in France and other countries involved in the Industrial Revolution. In When Old Technologies Were New, Carolyn Marvin observes the same phenomenon: “The electric light was the great late-nineteenth-century medium of the spectacle, dazzling its audiences with novel messages. In much social imagination, it was the premier mass medium of the future.” Electricity transformed not only science and the media but society as a whole. A century after Auguste Comte, Marshall Mac Luhan distinguishes three stages of civilization—tribal, scribal and electrical—in his essay The Gutenberg Galaxy.

In the novel, Electricity is a goddess praised by Bonnaire: “‘L’électricité me connaît, voici des années que nous faisons bon ménage ensemble.’ Et il disait cela d’un ton dévot et attendri, comme s’il eut parlé d’une divinité nouvelle, d’une puissance bienfaisante dont la Cité tirait le meilleur de sa prospérité et de sa joie” (173). As a “divinity,” electricity is also personified: “Elle est désormais l’unique force qui alimente nos machines; elle ne reste pas seulement dans nos ateliers

communs, elle se rend à domicile, elle y actionne les petits métiers particuliers, elle est l’ouvrière domestiquée dont chacun dispose” (173).

3.6.Heaven on earth

As with many utopias, La Crêcherie is associated with paradise. “Cette Crêcherie où le travail devenait propre, aimable et honorifique, où l’on vivait au milieu de toutes les douceurs, réservées jadis aux bourgeois seuls, n’était-ce pas son paradis qui se réalisait?” (145).

On the contrary, l’Abîme, as with other dystopias, is compared to Hell. The most compelling illustration of this comparison is the fire in the house of l’Abîme’s owner, Delaveau, who kills his wife by setting fire to his property and dies with her, putting an end to the old factories of l’Abîme and the old Bauclair: “Oui! Oui! Tout brûler, tout détruire, un incendie immense où la maison, l’usine disparaîtrait, où la ruine cette fois serait bien totale […] un bûcher gigantesque où lui-même tomberait en cendres avec cette femme parjure, empoisonneuse et dévoratrice, parmi les décombres fumants de la vieille société morte” (124).

In the novel, l’Abîme is always considered as a symbol of the old society while la Crecherie represents an inevitable evolution. As underlined by this passage, the fire represents the death of the old society. In this hell, Delaveau’s wife, Fernande, described as evil throughout the novel, could be compared to a sorcerer burning at the stake when the author described the fire burning her dress, her hair, and her skin while she screams with rage. Zola also characterizes the fire as a “feu vengeur”: “[Delaveau] l’emportait au néant, incendiés l’un et l’autre, brûlant du même feu vengeur” (302). The allusion to nothingness could be interpreted as a sign that the destiny of those two abominable souls is not to go to Heaven.
The binary opposition between heaven and hell is reinforced by the oppositions between the characters belonging in each factory. Ragu and Fernande, who try to kill Luc and to destroy La Crècherie, are described as evil, while Luc and Josine are compared to angels. L’Abîme, described as dark and muddy, is also opposed to La Crècherie, luminous and clean.

Zola’s utopian narrative itself is not only opposed to l’Abîme but to a dystopian vision of technology. At the end of the novel, Zola anticipates the disastrous consequences of technology in conflicts and predicts the First World War, as if in a moment of lucidity and premonition he regretted having written his long, utopian novel: “Une moitié de l’Europe s’était jetée sur l’autre. La science avait inventé des explosifs, des engins capables de porter la mort à des distances prodigieuse, d’engloutir brusquement tout un peuple.” (242) However, this possibility is eliminated to end the novel on an optimistic note.

As mentioned previously, Foucault compares utopias to mirrors. Utopia cannot exist without its counterpart, dystopia. Zola’s novel appears as a techno-utopia that anticipates nonetheless the dark vision of technology that will emerge during World War One.

Conclusion

The techno-utopianism expressed by Zola’s novel reflects the myths and dreams represented by technology at the turn of the century. As will be developed in chapter 2, electricity in particular was depicted in mystified terms by the press and literature of the Fin de Siècle. It is then that the expression La Fée Électricité was created and that fairy tale elements started to be employed to describe scientific phenomena, often seen to be miracles. One can imagine that the prodigious dimension
of technological innovations can be explained by the fact they revolutionized everyday life, were changing at a disconcerting pace and were very often incomprehensible for the majority of the population visiting the World Fairs.

While visiting the Universal exhibition of 1900, Paul Morand wrote: “Il est permis de penser que de toutes les attractions, de toutes les féeries, de tous les miracles, le souvenir demeure surtout, chez les visiteurs, du trottoir roulant.”129 The word “féerie,” which belongs to the folkloric genre of fairy tales, is commonly found in *Fin de Siècle* discourse on science, whether it refers to the moving sidewalk or any other invention. In literature, this genre is often referred to as *merveilleux scientifique*. The most relevant example is without a doubt *L’Ève Future* by Villiers to which chapter 2 is devoted. However, *Travail* also contains several fairy tale elements in the description of electricity, such as the first illuminations of the city:

Quand la nuit fut noire, l’usine entière s’embrasa, des milliers de lampes l’inondèrent d’une gaie clarté de plein jour. […] Jordan, que Soeurette avait enveloppé dans une couverture, par crainte de la fraicheur du soir, regardait toujours l’usine immense étinceler comme un palais de féerie (…) Il s’émerveillait du succès de cette œuvre dont il était l’artisan le plus ignoré et le plus actif. (142)

The expression “palais de féerie” and the verb “s’émerveiller” both refer to fairy tales. The word “merveilleux” is used in the novel exclusively in reference to technology: “Dans les laboratoires, ouverts largement aux recherches, il ne se passait pas de semaine sans qu’on fit des découvertes merveilleuses” (190). As in *L’Ève Future*

where the laboratory is qualified as “L’Eden sous terre,” the laboratories in *Travail* appear as new ideal spaces.
Chapter 2: Machines and Marvels: Fairy Tale Imagery

Villiers’s L’Ève Future

“Quelle Schéhérazade que l’Électricité! Répondit Edison. L’ÉLECTRICITÉ, milord! [...] Bientôt, grâce à elle, plus d’autocraties, de canons, de monitores, de dynamites ni d’armées!” (Villiers 175)

Introduction

For centuries, science and magic were indistinguishable. Though hard to imagine in today’s hyper compartmentalized world – where each science has seemingly endless subfields, specialized reviews, entire academic departments and rigorous criteria demarcating its specific contribution to scientific knowledge – until the eighteenth century, science was often described in terms that seem to come straight from fairy tale fantasy. Interestingly, the ancient link between science and magic resurges at the end of the nineteenth century, in the form of the scientific novel, most famously embodied in French literature by Jules Verne’s *Le Tour du Monde en Quatre-Vingts Jours* (1873). This revival is no doubt a product of scientific discoveries such as electricity, patented by Thomas Edison in the 1870s and 80s. As with other technological discoveries such as the telegraph and the telephone, electricity was part and parcel of a discourse on progress in the second half of the nineteenth century, with major social, technological, as well as imaginative, implications. Indeed, Jules Verne goes so far as to refer to electricity as “l’âme de l’univers”\(^{130}\), also known as *la fée électrique*\(^{131}\) in Fin de Siècle France. Nineteenth-century scientific discoveries were both fascinating and frightening when they first appeared, if not downright incomprehensible to the layman. Electricity, as well as other scientific phenomena such as atoms, was difficult to comprehend due in part to its invisible dimension. As a

\(^{130}\) Expression often found in Jules Verne’s novels, including *Le Château des Carpathes*.

\(^{131}\) La “Fée Électricité” (*the electricity fairy*) was an expression designating electricity in late nineteenth-century France.
result of the awe they inspired, they were considered a source of wonder and magic and described in mystified terms, leading to portrayals in popular culture in which electricity could revive the dead and slay the living, while the telephone was seen as the voice of spirits.

It is perhaps no surprise that the man at the center of these discoveries, Thomas Edison, becomes a literary protagonist in Villiers de l'Isle Adam's unjustly overlooked novel, *L'Ève Future* (1886). In the novel, a fictionalized Edison creates a perfect machine woman, an android, brought to life by electricity. Edison intends to help his friend Lord Ewald, disappointed by the woman he loves, Alicia Clary, whose extraordinary beauty is compromised by moral weakness and superficiality. Thanks to electricity, Edison creates an android— the term was coined by Villiers— combining Alicia’s physical appearance with an ideal soul and intelligence. The machine woman’s name, Hadaly— which, according to Villiers, means “ideal” in Persian— illustrates the utopian dimension of science.

Using the term utopia is appropriate during this historical period. For the fantastical works produced therein express the rupture that occurred at the end of the century in the representation of utopias: it is now science rather than politics that can lead human beings to happiness in a perfect place. For the first time in history, western mankind has almost completely explored the world; this makes the representation of utopia on an unknown island more difficult. Many utopian writers of the Renaissance such as Thomas More (*Utopia*) and Francis Bacon (*The New Atlantis*) described a perfect government on an island. Utopian descriptions no longer represent a new land but rather take place in the future, an ideal rendered possible by science, now

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perceived as the only progress that can lead to human happiness and perfection. Even though precursors such as Louis-Sebastien Mercier in *L’an 2440* (1770) had represented utopias in the future, it is mainly in the nineteenth century that the technological discoveries contribute to the portrayal of “uchronias” and ideal futures through novels such as Edward Bellamy’s *Looking Backwards* (1887) and H.G Wells’s *Time Machine* (1895). In France, even though Villiers’ *Ève Future* does not take place in another time period, the title itself references the future, placing us in the future-present of technological progress.

Often considered a science fiction novel, *L’Ève Future* arguably contains many elements of fairy tale fantasy, elements scholars have previously failed to consider. The text may thus be classified as a “scientific fairy tale”, a genre also overlooked by researchers. Moreover, the relationship between *fairy tale fantasy* and the concept of *utopia* has never been analyzed by scholars in literature and deserves consideration. Based on Ernst Bloch’s broad definition of utopia as a “wishful image”\(^\text{133}\) and not merely as the description of an ideal government, I claim that Villiers, as well as other novelists of his time, use fairy tale imagery to describe a new *scientific utopia*, the possibility for men to find love and happiness thanks to technology. Furthermore, the relationship between utopia and fairy tales as two expressions of “wish fulfillment” was long ago suggested by the philosopher Bloch in his collection of essays *The Utopian Function of Art and Literature*\(^\text{134}\), a suggestion that I will examine in detail through my discussion of *L’Ève Future*.

At the nexus of literature, philosophy and the history of science, this chapter will thus draw on Bloch’s parallel between fairy tale imagery and utopia in order to


analyze how fairy tales embody the language of techno-utopias through the example of Villiers’s novel. I will start by examining the novel from a new standpoint, considering Villiers’s *Ève Future* as a scientific fairy tale. In order to analyze the marvelous symbolism that flows through the novel, I will focus on the role of electricity described as a fairy in Villiers’ text as in late-nineteenth-century press and iconography. This marvelous dimension, also found in Jules Verne’s adventure tales, will enable me to show, secondly, how fairy-tale literary devices are employed to describe a new scientific utopia. This will be made more precise in the third part, which focuses on Edison’s laboratory —which Villiers calls “L’Eden sous terre” [underground Eden] — as a new utopian space, replacing the décor of a remote island with the space of a laboratory.

1. La Fée Électricité

1.1. Electricity, the invisible fairy

*La fée électricité* is an expression commonly used in *fin de siècle* France. In arts and media, science and enchantment were often associated during the second half of the nineteenth century and during the *Belle Époque* in France but also in other industrialized countries. The World Fairs were opportunities for nations to celebrate their scientific achievements. Already in 1851, when the Queen Victoria visited the Crystal Palace constructed for the Exhibition of London, it seemed to her that the building “had quite the effect of fairyland”\(^\text{135}\). Celebrating scientific progress, the palace contained a monumental painting representing fairies\(^\text{136}\). Historian of science

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Bernard Lightman\textsuperscript{137} calls this phenomenon a “sensational science” in the sense that advertisement and the mass media are used to commercialize scientific discoveries and machines as well as to celebrate each nation’s accomplishments.

As mentioned in chapter 1, the phenomenon can also be explained by a necessary vulgarization of science. Since the seventeenth century, scientific publications had become more and more complex. In the nineteenth century, the professionalization and specialization of the field also corresponded to a wider diffusion of science involving a different vocabulary and the use of well-known cultural references, such as fairy tales\textsuperscript{138}. Many tales, plays and periodicals appeared, mixing education and entertainment.

Fairy tales represented a perfect way to illustrate science. Tales compared the body to an “enchanted machine” and fossils to giants’ bones\textsuperscript{139}. Scientific phenomena also seemed more entertaining in this guise, as explained by British science writer John Cargill Brough in the preface of \textit{Fairy Tales of Science} (1859): “To adapt the work to the capacity of all, I have endeavored to divest the different subjects treated in it of hard and dry technicalities, and to clothe them in the more attractive garb of fairy tales, a task by no means easy.”\textsuperscript{140} As Villiers compared the telephone to a spirit, Brough compared dinosaurs to dragons.

\textsuperscript{139} Macé, Jean. \textit{Histoire d’une Bouchée de Pain}. 1861. New York: Henry Hold and Company, 1867. p. 89
\textsuperscript{140} Brough, John Cargill. \textit{The Fairy Tales of Science: A Book for Youth}. London: Griffith and Farran, 1859. p. iii
According to French scholar Laurence Talairach-Vielmas\textsuperscript{141}, the image of the fairy is commonly found in Victorian literature of the time. English literature and iconography contains numerous examples, such as paintings by John Anster Fitzgerald. In her tales for children, Arabella Buckley illustrates invisible, scientific phenomena, such as dew, by the presence of fairies. In \textit{the Fairy-Land of Science} (1879), Buckley reconciles science and fairy tales:

I have promised to introduce you today to the fairy-land of science a somewhat bold promise, seeing that most of you probably look upon science as a bundle of dry facts, while fairy-land is all that is beautiful, and full of poetry and imagination. But I thoroughly believe myself, and hope to prove to you, that science is full of beautiful pictures, of real poetry, and of wonder-working fairies […] Now, exactly, all this which is true of the fairies of our childhood is true too of the fairies of science. There are forces around us, and among us, which I shall ask you to allow me to call fairies, and these are ten thousand times more wonderful, more magical, and more beautiful in their work, than those of the old fairy tales. They, too, are invisible.\textsuperscript{142}

This quote not only questions the separation of science and arts into two discrete forms of knowledge but also reveals one of the new complexities of nineteenth-century science: the invisible. How could scientists illustrate phenomena such as atoms or electricity? How could those be taught and explained? \textit{La Fée Électricité} thus appears as an illustration of that impossibility to describe the invisible.

Buckley's \textit{Fairy-Land of Science} is also an illustration of a new cult of the wonder and a popular interest in scientific phenomena, which was formerly the


privilege of an elite. The popularity of the dancer Loie Fuller’s electric shows, also known as *La fée de l’électricité* (not to be confused with *la fée électrique*), appears as a relevant example of a widespread attraction for science as a spectacle. As illustrated by the poster below (see fig. 1), Fuller’s electric shows were the main attraction of Parisian music hall Les Folies-Bergère. The wings around her arms contribute to her representation as a fairy.

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143 Loie Fuller was an American dancer of the turn of the century who performed in various countries including France. As her shows included electric lighting, she was a pioneer of both modern dance and theatrical lighting techniques.
Art historian Patrizia Veroli justifies the popularity of Loie Fuller’s electric dances and shows by the interest the masses had in art and science at the beginning at turn of the century:

Magic shows, Serpentine Dances, early cinema: the aesthetic of surprise presumed the decline of traditional faith and its substitution with the cult of the wonder, in an urban setting dominated by technology. Science was a constituent of this world of marvels. Its social organization did not concern only small groups of privileged intellectuals, as in the eighteenth century, but also the masses. At the end of the nineteenth century, people had become more educated and better informed; consequently, they had developed an interest in
wider cultural issues, and this new curiosity was catered for in universal exhibitions, fairs and spectacles. The unexpected and hitherto unknown life of the ‘infinitely small’ or of the stars and the cosmos was staged in the theatres by projecting through the magic lantern images obtained with microscopes and telescopes. There existed at that time a short circuit between science, imagination and literature.\textsuperscript{144}

The masses were indeed better informed. The end of the nineteenth century is often considered the golden age of the press in France, as it is the period in history when the French consumed the highest number of newspapers. Among the numerous publications available, many weekly or monthly journals were devoted to a vulgarization of science, such as \textit{La Nature, Tour du Monde} and \textit{Le Musée des Familles}. It is in this context of production of a popular discourse of science that technology was incorporated into arts, as illustrated by the posters advertising the Parisian World Fairs.

1.2. The celebration of the electricity fairy at the World Fairs

The first international electricity fair was held in Paris in 1881, a few years before the publication of Villiers’s text. But it was mainly in 1889 that the World Fair held in Paris celebrated the emergence of electricity in the arts and industry. Discourse on scientific marvels flourished on this occasion. At the helm of \textit{La Nature} bi-weekly, journalist Henri De Parville gave lively descriptions of World Fairs and remains famous as one of the main scientific popularizers of the late nineteenth century. In his

description of the fair\textsuperscript{145}, he details the effect of electricity at night, as it was the first exhibition that remained open in the nighttime. To him, illuminations are “magical” and create “enchanted gardens”. The figures of speech used by De Parville could easily be found in a fairy tale. He concludes that electricity is “la grande magicienne de l’exposition.”\textsuperscript{146}

At the fair of 1889, visitors also had the possibility to visit a theme park called the \textit{jardin enchanté (the enchanted garden)}, situated between the avenues Rapp and Bosquet. The illustration by Chéret (see fig. 2) also represents a fairy. The oscillation between fiction and reality is reinforced by the complementary colors and by the posture of the fairy, whose foot invades the frame of the poster. Electricity enabled visitors to escape into a dream world, while still remaining in reality.

\textsuperscript{146} De Parville \textit{op.cit.} 77
The world fairs were not the only occasions to celebrate the wonders of electricity. At the turn of the century, several exhibitions were entirely devoted to electrical energy. The *expositions internationales d’électricité* were also the subject of a vast iconography. On the ad below, which served as a promotion for the exhibition of Marseille in 1908, electricity is represented as a fairy whose hands illuminate the city (see fig. 3).
Fig.3. Dellepiane, David. *Affiche Pour l'Exposition de l'Électricité à Marseille*. 1908. Lithograph. Bibliothèque nationale de France, Paris, France.

Paintings also illustrate the link between fairyland and electricity, as revealed by the name of Maxime Maufra’s painting, *Féerie Nocturne*¹⁴⁷ (1900). The description of electricity as a fairy could be found in scientific discourse for several decades, illustrating the persistent feeling of wonder generated by technology. When asked to represent electricity for the Universal Exhibition of 1937, Raoul Duffy chose to call his painting *La Fée Electricité*. As revealed by the name of the painting, electricity and fairy tale fantasy remained associated for several decades, expressing a utopian dimension of science that has never disappeared. On the painting, visitors could admire, against a blue background, Greek gods standing alongside scientists. The power plant generators are linked by Zeus’s thunderbolts, representing science as sacred.

¹⁴⁷ *Night-time fairyland*
1.3. Villiers and the ‘merveilleux scientifique’

On the first page of Villiers's novel, the author classifies the story as a “legend” in which the hero is considered “a magician” and “a wizard” (37). The reader then penetrates in a tale full of fairies, spirits, castles and magic, as well as other characteristically supernatural elements. The machine-woman herself is compared to a fairy. Other novels such as Jules Verne’s contain the same components leading some writers of the time to classify such novels in a new genre, the *merveilleux scientifique*, before inventing the word ‘science fiction’. At the same period, the English language created the term “scientific romance”, which does not translate the exact meaning of *merveilleux scientifique*: a scientific novel that uses science as a source of magic, a novel at the nexus of fairy tale fantasy and science fiction. Nineteenth-century writers often based their description of machines on myth and fairy tale references. Thus, in
Villiers’s novel, the discourse on science is filled with fairy tales elements, from symbols sprinkled in the texts—such as a golden key—to explicit references to *The Arabian nights*. Science itself—but also the scientist, the laboratory and the machine woman—are described in magical terms.

1.4. Electricity in Villiers’ novel, the Scheherazade of *The Arabian Nights*

As mentioned, the novel contains many explicit references to *The Arabian Nights*. Edison compares electricity to the princess of the various stories that make up the work: “Quelle Shéhérazade que l’Électricité! Répondit Edison—L’ÉLECTRICITÉ, milord!” (175) As for the telephone, it has a magical dimension. It is depicted as a female spirit, called Sowana, and compared to another character of the collection of Persian tales: “Je suis un peu comme l’un des génies de l’Anneau, dans les *Mille et une Nuits*.” (47). Sowana is a voice Edison can hear and talk to. Comparing the telephone to a genie draws a parallel between scientific inventions and the fulfillment of human dreams. The new found ability to connect different parts of the world with the telegraph or the telephone was considered a dream come true, as if humans had rubbed an enchanted lamp.

At the end of the nineteenth century, scientific discoveries are often believed to bring happiness. One can thus draw a parallel between the power of science and the one of the lamp, between the scientist and the genie. In the children’s book *The Fairy Tales of Science* (1859), British science writer John Cargill Brough considers Aladdin’s lamp as “a poetical image of science”:

Genii, airts, and ghouls, have long since lost their terrors, but the wonderful stories told about them will continue to charm the youthful mind for centuries to come. Chief among these stories is that of Aladdin […] By merely rubbing a
lamp he summoned these superhuman servants, who waited on him hand and
foot, brought him untold wealth, transported him from place to place, and
fulfilled his wildest desires. Upon this beautiful Arabian romance we ground
our concluding fairy tale of science. Our wonderful lamp is merely a poetical
image of Science. The lamp of science dispels intellectual darkness, and floods
the world with its all-penetrating light. The night-prowling ghouls, Ignorance
and Superstition, dare not encounter its glancing rays, and descend shrieking
into the abyss, while Industry toils in the glare, and seems to acquire new vigor
whenever the flame increases in brilliancy. The attendant genii of this
wonderful lamp are those powers of the material world which have been
subjugated by man the Aladdin of our story.\(^{148}\)

Science is thus described as a rubbing lamp able to fulfill human desires and
electricity represents an illuminating force against intellectual darkness. Similar
magical symbols are numerous in Villiers’ novel. The references to gold— common in
folkloric tales and myths— provides a relevant example.

1.5. Golden machines

Hadaly is described as a goddess wearing gold. Gold is a recurrent element in
the novel, as well as in many folkloric tales. Gold symbolizes purity, royalty and the
divine. In alchemy, gold represents perfection and man’s elevation, while in theology
it represents the Christ. In the novel, Hadaly’s dress has two “phalênes d’or”, an
“immortelle d’or”, and a “fleur de deuil qui est d’un or vierge et pur d’alliage.” (134)

\(^{148}\) Brough, John Cargill. *The Fairy Tales of Science: A Book for Youth*. London: Griffith and Farran,
The casket in which Edison keeps her, has to be opened with a golden key in the shape of a star. Her lungs are made of gold because, to Edison, it is marvelous: “l’or vierge ! […] l’or est le merveilleux métal qui ne s’oxyde pas !” (149). Her voice is recorded in a golden phonograph.

The choice of gold can be justified by the notion of perfection characterizing the machine woman. Dressed in gold, the machine woman is described as the princess of a fairy tale, sometimes designated as a ‘Sleeping beauty’ (156). As the heroine of a tale, she is qualified as « perfect » (157). As a fairy tale female character, Hadaly needs to be protected and saved by a man: “lorsqu’elle ne trouve pas ces aliments sous sa main au moment où elle les désire, elle s’évanouit […] pour donner à son élu le plaisir de la ressusciter.” (153) As a princess or a queen, Hadaly is also “noble” while Alicia is “bourgeoise”. Hadaly’s ideal personality is reinforced by the weakness of the other female character, Alicia.

As a symbol of perfection, gold is a motif commonly found in utopian texts149. Indeed, perfection is one of the main defining traits of utopias. Rabelais’s Gargantua, published in the sixteenth century, contains a utopia, the Abbaye of Thélème, characterized by its perfection. The abbaye is filled with gold, silver and precious stones— all recurrent elements in traditional utopian spaces. Interestingly, Jacques Noiray also notices the ubiquitous use of gemstones in nineteenth-century literature and particularly in the descriptions of machines in Jules Verne’s novels. To Noiray, they are symbols of the supernatural and marvelous characteristics attributed to machines. They are described as sacred objects.

1.6. Marvelous Machines

149 See chapter 1
As perfect worlds, utopias and fairy tales are wonderlands. Through her name and description, Villiers’s android represents the ideal dimension attributed to machines at the turn of century. In *Le Romancier et la Machine*¹⁵⁰, Jacques Noiray, states that, in the second half of the nineteenth century, machines are described as wonders. He gives the example of Zola, Villiers and Verne, among others. In Verne’s *Robur Le Conquérant*, Noiray points out the recurrence of the term “merveille” to designate the machine, in that case, an aircraft named *l’Albatros*. As a “merveilleux appareil”¹⁵¹, the “merveilleux Albatros” offers “des conditions merveilleuses de vitesse et de sécurité.” According to Noiray, those magical descriptions can be found in all of Verne’s scientific novels: “Ce procédé De célébration de la machine, qui se retrouve dans toutes les œuvres de Verne a fondements techniques est de nature évidemment magique.”¹⁵² Indeed, in *Vingt Mille Lieues sous les Mers*, the Nautilus is a “merveilleux bateau.”¹⁵³

As a source of wonder, machines were thought to transform the world and fulfill men’s dreams. Hadaly is not only a fairy but also Lord Ewald’s remedy. At the beginning of the novel, Lord Ewald is about to end his life, leading Edison to build a machine woman to cure him and help experience the bliss of love. Science will enable Edison to make his dream come true, drawing a parallel between science and the promises of happiness. The word “fairy” derives from the Latin *fatum*, which means “prediction” or “destiny”. The fairy, if she is an enchantress, carries the promise of a better future.

¹⁵¹ Verne, qtd in Noiray, op.cit., p.73
¹⁵³ Verne qtd. in Noiray, op.cit., p.134
At the turn of the century, science is the object of a utopian discourse illustrated by Villiers’s novel. As mentioned before, the word utopia, invented by Thomas More in 1516, can mean good place or no place. Utopias represent the human search for happiness and, like fairy tales, are situated in a time and place different from the context of writing.

2. L’Ève Future, a Techno-Utopia

In Villiers’s novel, technology carries the promise of future happiness. According to Edison, the machine will fulfill Lord Ewald’s wishes: “Le remède consiste à réaliser vos vœux ! [...] Je veux accomplir votre rêve tout entier !” (106) The use of italics by Villiers reinforces the power attributed to the machine. Science is also thought to fulfill men’s dreams in general: “Maintenant, ajoute l’électricien, nous allons, puisque vous le désirez, examiner, d’une façon sérieuse, l’organisme de la créature nouvelle, électro humaine—de cette EVE FUTURE, enfin, qui, aidée de la GENERATION ARTIFICIELLE (déjà tout à fait en vogue depuis ces derniers temps), me parait devoir combler les vœux secrets de notre espèce, avant un siècle ” (175). Rather than ambition or desire, Villiers chooses to use the word wish [voeu]. A utopian longing is a desire for what philosopher Ernst Bloch calls “wish fulfillment”. Utopias are expression of hope. Indeed, for Bloch, utopias are part of the human conscience. What Bloch calls the “Not-Yet-Conscious” or “Not-Yet-Being” is central to human thought. Men cannot be satisfied with the conditions of their existence and with status quo. Creating utopias is a universal impetus, stemming from humankind's feeling of incompleteness. To fill the void, men create what Bloch calls “wishful images”: utopian longings for fulfillment.
2.1. Technological-magical utopias (Ernst Bloch)

In the continuation of his work *The Principle of Hope*, Bloch states, in his collection of essays *The Utopian function of Art and Literature*, that fairy tales reflect those utopian longings:

It all adds up to this: the fairy tale narrates a wish fulfillment that is not bound by its own time and the apparel of its contents […] Not only does the fairy tale remain as fresh as longing and love but the demonically evil, which is abundant in the fairy tale is still seen at work here in the present, and the happiness of ‘once upon a time’, which is even more abundant, still affects our vision of the future.¹⁵⁴

According to Bloch, even though many fairy tales take place in the past, the wish fulfillment they express still exists. He uses several examples, such as the popularity of Disney movies in contemporary America. But most importantly for our purpose, Bloch takes the example of what he calls “technological-magical utopias”:

If one turns from here, that is, from the old story that remains eternally new, to the really new and newest history, to the fantastic changes of technology, then it is not surprising to see even here a place for forming fairy tales, i.e, for technological-magical utopias. Jules Verne’s *Journey around the World in Eighty Days* has by now become significantly shortened in reality, but *The Journey to the Center of the Earth* and *the Journey to the Moon* and other creative narrations of a technological capacity or not yet capacity are still pure formations of fairy tales. What is significant about such kinds of ‘modern fairy

tales’ is that it is reason itself that leads to the wish projections of the old fairy tale and serves them.\textsuperscript{155}

What is interesting in this quote for our purpose is the reference to reason. Techno-utopias are indeed an illustration of the link between imagination and reason, arts and science. Utopias are “wishful images” created by reason. It is not surprising that Bloch uses Jules Verne as an example since the Industrial Revolutions of the nineteenth century witnessed the development of what the French called \textit{merveilleux scientifique}, a genre that exemplifies the combination of literature and science. Yves Citton, in his article \textit{La Science Illuministe du Merveilleux}, also calls this category « novels of magic », a category that appeared in the eighteenth century with the Enlightenment: “À l’horizon à la fois inquiétant et prometteur que fait déjà miroiter Mesmer, le magnétisme et l’électricité – phénomènes de champs et d’ondes qui animent la matière, plutôt que phénomènes de particules ou de corps de matière – mettent en scène une magie de la communication, tout autant qu’une science des choses. La physique la plus audacieuse, portée par la technologie la plus étonnante, rejoint le merveilleux en portant la vue et la pensée aux frontières de l’immatériel. La science est merveilleuse (de par ses effets techniques), le merveilleux marque l’avant-garde du scientifique.”\textsuperscript{156} Phillipe Sellion calls this phenomenon a “merveilleux vraisemblable”\textsuperscript{157}. To him, what we now call science fiction is derived from that category\textsuperscript{158}.

\textsuperscript{155} Op.cit, 165
\textsuperscript{157} \textit{merveilleux vraisemblable} in French
\textsuperscript{158} « Notre “merveilleux vraisemblable” s’appelle la science-fiction: les “mutants” ont remplacé les “métamorphoses”. En 1670, le passé envahissait le présent ; aujourd’hui notre présent est envahi par le futur » (Sellier 103) [Our realistic supernatural is called science fiction: ‘mutants’ have replaced ‘metamorphoses’. In 1670, the past invaded the present; today our present is invaded by the future.]
2.2. The magical function of technology (Gilbert Simondon)

Philosopher Gilbert Simondon, in his collection of articles *Sur la Technique*\(^{159}\), examines the “sacrality” of technical objects, often considered as simple tools by other theorists such as Heidegger and Mircea Eliade\(^{160}\). Simondon claims that our creation of machines and automatons reveals our need of magic and fetishes: “L’intention magique est à l’origine même de la fabrication de l’objet technique comme automate. Ce n’est pas la technicité qui apporte inévitablement l’automatisme mais l’homme qui demande à la technicité un automatisme magique.”\(^{161}\) However, the “sacrality” of technical objects is inferior to the one of real fetishes: “Ces objets sont dotés d’une sacralité d’espèce inférieure, parcellaire, détachée, liée à une attitude humaine de recherche d’amulettes et de fétiches.”\(^{162}\) According to Simondon, the magical powers attributed to machines can be explained by human’s fear of strenuous work, danger or responsibility:

*L’automatisme correspond à un besoin de l’individu en condition d’insécurité […]* Tel stylo, telle automobile assurent le succès commercial. Les constructeurs et vendeurs savent capter cette *faim de magie* qui existe dans un groupe humain, selon les situations ou les individus se trouvent engagés : la crainte du danger, l’accablement devant le travail, la crainte de l’échec en affaires ou en amour, le désir de supériorité n’ont pas nécessairement une signification collective mais bien individuelle. C’est la tendance de *l’individu* qui est à l’origine de cette adjonction de magie à l’objet technique. Tout particulièrement, on accuse souvent l’objet technique de mécaniser la vie :


\(^{160}\) Simondon, *op.cit.* 74

\(^{161}\) Simondon, *op.cit.* 78

\(^{162}\) Simondon, *op.cit.* 76
mais en fait c’est la femme en situation de ménagère qui demande à une
machine à laver ou à d’autres machines de la remplacer dans une tâche pénible
et dont elle craint de s’acquitter mal. Des récits féériques nous présentent les
ménagères des temps passés accablées de travail, s’endormant à la besogne,
vaincues par le découragement ; mais une fée veille, et les fourmis ou les
gnomes viennent travailler pendant la nuit. Au réveil, tout est net, tout est prêt.
La machine à laver moderne est magique dans la mesure où elle est
automatique et non point dans la mesure où elle est une machine. […]
‘Moderne’ signifie ‘magique’, pour le subconscient individuel de
l’utilisateur163.

In the case of Villiers’ novel, Lord Ewald fears the danger of love: the
encounter, the acceptance of someone’s difference, the disappointment, and the
separation. Technical objects—here the android— are thus given a magical function.

2.3. The “fonction onirique” (Jean Brun)

In Le Rêve et la Machine (1992), philosopher Jean Brun reveals the dreams
hidden behind the history of science and technology. According to him, our
relationship to machines has little to do with scientific rationality and the history of
science and technology: we often create machines we do not need based on a dream:

Nos machines de plus en plus rapides, la griserie demandée à la vitesse, les
noms mythologiques donnés à des fusées chargées d’aller sonder les mystères
de l’au-delà extra-terrestre en permettant, telle « Ariane », de découvrir la
porte qui donne hors du labyrinthe existentiel, sont des enfants de rêves et non

163 Simondon, op.cit. 76-77
ceux d’abstraites théories scientifiques. [...] La fonction utilitaire de la machine n’en est donc que la face diurne, il faut en mettre au jour la fonction onirique.164

This “fonction onirique” thus explains the role of marvelous symbolism in literary descriptions of technology, as exemplified by the quote that precedes Jean Brun’s essay: “les contes de Perrault sont les archives de nos laboratoires.”165 Brun also gives the example of numerous myths such as Icarus and Prometheus.

2.4 The intersection of science and arts, reason and imagination

As mentioned above in Bloch’s quote, reason is not absent from fin de siècle scientific utopias. The word utopia as the word fairy tale has acquired a negative connotation. Fairy tales are often thought to stimulate readers’ imagination rather than logic. Utopian became a synonym for impossible in the twentieth century. However, for Bloch, utopias are based on reason. In Bloch’s views, utopias are not unrealistic daydreams but realistic hopes —docta spes— guiding men and historical progress. They are not impossible dreams but rather they express what Bloch calls the ‘Not Yet Conscious’. Utopias are often associated with the notion of revolution and thus have an impact on reality. According to Bloch, utopias express latency: they reveal what he calls the “anticipatory consciousness” of men. In other words, social changes are often latent and need a particular historical context to become effective. Before they do, utopias might reflect those potential changes. The anticipatory consciousness is also subversive and becomes a “utopian function”: a historical process towards a better future. Bloch compares utopias to a red path: they illustrate revolutionary movements

165 Qtd. in Brun, 10
in history guiding men from abstraction to action and reflect what Bloch calls a “militant optimism”. Utopias are not only theories but also praxis.

Bloch’s Not Yet Conscious can be compared to Yves Citton’s possibility: according to Citton, in his article La Science Illuministe du Merveilleux, fairy tales express a rational possibility. Wonder tales express the possibilities of science, making science a wishful image, a utopia. Utopias, as fairy tales, have to do with imagination and are often falsely opposed to reason whereas science is considered as based on reason. Yet, the dictionary of utopias includes an article on science in which the author, Antoine Picon, establishes a relationship between the two, based on writers such as Bacon, Condorcet and Saint-Simon. What we now call science fiction is a new form of scientific utopia or dystopia.

2.5. From scientific fairy tales to science fiction

As analyzed by Tzvetan Todorov in The Fantastic: A Structural Approach to a Literary Genre (1975), what we consider to be different genres— fairy tale, fantasy and science fiction— are actually very similar ones. What distinguishes them is their relationship to reality. It should be noted that twentieth-century science fiction novels derive from these genres and from the profusion of scientific discourse at the end of the nineteenth century. In his article on science fiction in the Dictionnaire des Utopies, Gerard Klein, analyzes the relationship between science fiction and utopia. As mentioned above, utopian thought changes in the nineteenth century: the ideal state is imagined in the future rather than in the past or on an island. The faith in scientific progress, rather than in institutional progress, seems to prevail.

It is only in the nineteenth century that an increasing number of anticipation novels are published. To Gerard Klein, anticipation, in the nineteenth century, is linked to utopia whereas, in the twentieth century, it is associated with anti-utopias and dystopias. The Dictionnaire de la Langue Française de Littré defines anticipation as: “le futur anticipé par l’imagination” This is what defines utopia in the nineteenth-century: the representation of a better place, not on a remote island, but in the future.

Fairy tales and myths thus appear to be appropriate literary devices to express what Pierre Musso calls “techno-utopies”. Indeed, utopias represent a promise of happiness in another place or time. Science and machines carry the promise of better tomorrows, connecting men, making their lives and work less painful. Utopias are represented in places associated with science such as the laboratory, described as magical in L’Ève Future: “Là, c’est un peu le royaume de la féeerie. Tout s’y passe à l’Électricité. On y est, dis-je, comme au pays des éclairs, environné de courants animés chacun par mes plus puissants générateurs.” (162) The laboratory is sacred and religious. Edison installed the laboratory in an ancient secret underground, containing mummies and bones from an ancient tribe. The laboratory is a new Garden of Eden, celebrating science as a religion and the scientist as its God. It is described in the third section of the book, entitled “L’Eden sous Terre”.

3. The Laboratory, a New Heterotopia

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162 Emile Littré, Dictionnaire de la Langue Française, 1. 1 .1863. p. 453.
169 The Underground Eden
3.1. The Underground Eden

In this section, I will compare the laboratory of Villiers’s novel to a new utopian space or what Michel Foucault would call a heterotopia, a space out of time and out of space in which one can escape—such as gardens or boats. In the nineteenth-century, the laboratory, and later the cyber space, appear as new ideal spaces replacing the traditional utopias represented, up until the middle of the nineteenth-century, as a Garden of Eden.

Many utopias were still literary descriptions of a lost paradise in the eighteenth century. French literature contains numerous examples of Edenic utopias: The Eldorado in Candide (1759), Le Supplément au Voyage de Bougainville (1772), Paul et Virginie (1787). They share the same characteristics: abundant and luxuriant vegetation, ideal climate, innocence of the inhabitants, generous nature, and absence of sin. Even though Villiers’s utopia is situated in a laboratory, it is described as a Garden of Eden. Indeed, though underground, it is a garden, filled with flowers and exotic birds, where Edison keeps Hadaly—his “innocent creature”—as well as “a bird of paradise”:

Le demi-orbe qui formait le fond de la salle, en face du seuil, était comblé par de fastueux versants pareils à des jardins ; là, comme sous la caresse d’une brise imaginaire, ondulaient des milliers de lianes et de roses d’Orient, de fleurs des îles, aux pétales parsemés d’une rosée de senteur, aux lumineux pistils, aux feuilles serties en de fluides étoffes. Le prestige de ce Niagara de couleurs éblouissait. Un vol d’oiseaux des Florides et des parages du sud de l’Union chatoyait sur toute cette flore artificielle, dont l’arc de cercle versicolore fluait, en cette partie de la salle, avec des étincellements et des

prismes, se précipitant, depuis la mi-hauteur apparente des murs circulaires, jusqu’à la base d’une vasque d’albâtre, centre de ces floraisons, et dans laquelle un svelte jet d’eau retombait en pluie neigeuse. (166)

The lexical field of flora gives the impression that one is in a garden rather than a laboratory: “jardins”, “lianes”, “roses”, “fleurs”, “pétale”, “pistils”, “feuilles”, “flore”, “floraison”. The description of the garden, in this chapter called “enchantements”, contains many fairy tale elements. As mentioned above, the rose is a recurrent motif throughout the novel. As an enchanted space, the laboratory contains “une rosée de senteurs” and oriental roses. Orientalism is also frequently used by the author to enable the reader to escape and find refuge in a fairy tale atmosphere. In the laboratory, compared to a “palais de Bagdad” (165), roses are oriental and flowers come from islands and Florida. The imaginary breeze reinforces the impression that the laboratory belongs to a fantasy world. The laboratory is explicitly magic: “ce laboratoire semblait, positivement, un lieu magique; ici le naturel ne pouvait être que l’extraordinaire” (107). The word ‘extraordinary’ reinforces the idea that the reader escapes the ordinary and reality to enter a new dimension. As the inhabitants of traditional utopias, Hadaly is described as “innocent”, “pure”, “virginal” and sinless.

As any utopian text, Villiers’s novel also gives the reader the impression of reaching the sky. The description of the laboratory is characterized by the presence of the color blue:

Un grand jour d’un bleu pâle éclairait la circonférence démesurée […] sur des fonds bleuâtres […] Au centre de la voûte, à l’extrémité d’une longue tige d’or, tombait une puissante lampe, un astre, dont un globe azuré ennuageait les électriques rayons. Et la voûte concave, d’un noir uni, d’une hauteur
monstrueuse, surplombait, avec l’épaisseur du tombeau, la clarté de cette étoile fixe : c’était l’image du ciel tel qu’il apparaît, noir et sombre, au-delà de toute atmosphère planétaire. (166)

The color blue — representing infinite spaces, ideals, fantasy and escapism — is also an element characteristic of fairy tales\(^{171}\). In the novel, science is associated with the color blue, used to describe the laboratory, electricity “ébouissant jet bleu” (44) and the machine woman “une forme bleue et voilée” (323). It is also a motif in Romanticism. In his novel *Henri d’Ofterdingen*, Novalis choses a blue flower to symbolize the link between two worlds: the real world and the world of dreams where the artist finds refuge and inspiration. In the novel, the blue flower represents the union of dream and reality as well as the love Henri shares with Mathilde.

As the machine woman wears silver, gold and precious stones, the laboratory contains precious materials as well: “liserons d’argents”, “longue tige d’or”, “dessins d’or”, “miroirs d’argent”, “rose d’or.” (166-167) In the laboratory, the temperature is warm and ideal: “otons nos fourrures! Dit-il: car la température est ici réglée et délicieuse!” (170) Many utopian spaces described in literature from all periods contain similar descriptions, such as *Paul et Virginie*’s island, where the characters always enjoy “la pureté de l’air et la douceur du climat.” (124) Numerous utopias, such as the Golden Age, contain the motif of the eternal spring.

3.2. Exoticism

The laboratory is described an exotic fantasy world, which underlines its separation from the real world. Other references to *The Arabian nights* take other forms, including epigraphs placed at the beginning of chapters, or references inserted

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within the text, such as this short description of Lord Ewald’s first visit in the laboratory, description that perfectly highlights the fairy tale dimension of the novel: “La vitesse diminua, peu à peu, puis un choc léger…Un porche lumineux tourna, silencieusement, en face des deux voyageurs, comme si quelque « Sésame, ouvre-toi ! » l’eût fait rouler sur des gonds enchantés. Une odeur de roses, de kief et d’ambre flotta dans l’air. Le jeune homme se trouvait devant un spacieux souterrain pareil à ceux que, jadis, sous les palais de Bagdad, orna la fantaisie des califes.” (165) The porch is enchanted as if science had nothing to do with the mechanism. By eluding the rational explanation, the text suggests that the laboratory is filled with magic, as suggested throughout the novel: “le laboratoire prit l’apparence d’une grotte magique”(435) The reference to the palaces of Bagdad in the “olden days” referring to a distant and yet undistinguishable past also evokes the time of fairy tales. As stated by Georges Jean in Le Pouvoir des Contes, “les contes sont toujours d’autrefois.” 172 Indeed, fairy tales are generally situated in a distant and ideal past, as utopias that are also situated in an elsewhere, such as the past, the future or a remote island 173.

The quote also describes the laboratory as exotic. Fairy tales contain exotic elements to express escapism. In fairy tales and utopias, space and time are always different from the context of writing enabling the reader to escape reality. Escapism is clearly expressed in numerous passages of the novel, in particular regarding scientific phenomena described by Edison: “je dois vous prévenir que nous allons, maintenant, quitter ensemble les domaines (inexpliqués, sans doute, mais trop parcourus, n’est-ce pas ?) de la vie normale, de la Vie proprement dite, — et pénétrer dans un monde de phénomènes aussi insolites qu’impressionnants.” (111-112).

The example of exotic birds that fly around the laboratory illustrates its utopian dimension. The laboratory is filled with exotic birds. As in many fairy tales, birds can talk. This phenomenon, among others, is what Edison calls “miracle” throughout the novel, drawing a parallel between scientific creations and divine intervention. Science is compared to religious miracles and the scientist to a God. The notion of scientific miracle can be found in many novels of the time. According to Jacques Noiray, in *Le Romancier et la Machine, L’Image de la Machine dans le Roman Français*, machines are often described as sacred: “Proclamer la machine, au moyen d’expressions toujours identiques “chef d’œuvre”, “prodige”, “merveille”, etc., revient à transformer, par la magie persuasive du langage, l’objet technique en objet sacré, et par là même à changer l’admiration que le personnage ou même le lecteur lui portent, en un véritable sentiment d’adoration.” Villiers’s novel is also filled with sacred symbols, such as gold, as I have already described.

Lastly, as in traditional utopias, the laboratory is a secluded and isolated space. Utopian spaces are indeed hard to reach, surrounded by mountains or on an island. In *Candide*, Voltaire situates the country of El Dorado in a land circled by mountains. The inhabitants are not allowed to leave the country. As other utopias, Villiers’s laboratory is underground and only accessible by pressing a secret button, taking an elevator and pushing a gate. Edison is often described as “immured” in it. It is far from the ground and dangerously accessible. It is also secret, as only Edison, Hadaly and Sowana, know the “secret way” to the laboratory. In addition, the laboratory is sacred and religious. Edison installed the laboratory in an ancient secret underground,

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containing mummies and bones from an ancient tribe. The laboratory is a new sacred space, celebrating science as a religion and the scientist as its God.

3.3. Lost Paradise

In Villier’s novel, the creator of the Garden of Eden is the scientist. The numerous references to Milton’s *Lost Paradise* in Villiers’s text seem to suggest that the scientist intends to create an artificial paradise. In many ancient utopias, Gods were the creators of the ideal land. The first literary utopias go back to the Antiquity, the most famous being the Golden Age in Hesiod’s *Works and Days*, Ovid’s *Metamorphoses* and Saint Augustine’s *City of God*. In those utopias, Gods are the creators of the ideal space, as in the Golden Age: “First of all the deathless gods who dwell on Olympus made a golden race of mortal men” (Hesiod v.139-164). In Saint Augustine’s *City of God*, there are two cities: the perfect city of God above, and the imperfect city of men, situated on earth. As expressed by Saint Augustine, in Christianity, utopia does exist: it is heaven. Utopia is conceived as eschatological and apocalyptic. Men will enter the perfect place after their death.

However, since the Renaissance, utopias have been conceived as human creations. In the nineteenth century, scientists, often compared to gods, created their own ideal worlds, which could be perceived as a heresy. In Villiers’s novel, Edison, by giving life to a machine woman, is often compared to Prometheus, stealing God’s power of creation. Electricity has replaced fire. References to the Promethean myths are numerous in the novel. According to Edison, every man is a Prometheus: “Tout homme a nom Prométhée sans le savoir” (130). At the beginning of the century, the myth was used to denounce man’s hubris and desire to take God’s place. In *Frankenstein or the Modern Prometheus* by Shelley, published in 1818, the reference
to Prometheus serves the author’s purposes in blaming and punishing human beings for the creation of the monster and for the domination of a sublime nature. The monster created by the scientist brings death and misery whereas Hadaly brings a will to live and happiness to Lord Ewald’s existence. In late nineteenth-century novels, the Promethean myth thus serves a different purpose. It represents men’s dream and quest for scientific knowledge. After controlling fire, men gained control of electricity.

The reference to Prometheus can therefore be related to the utopian dimension of science. Bloch, in *The Principle of Hope*, frequently refers to Prometheus. Indeed, utopias, rather than expressing men’s hybris, represent men’s Promethean dreams and enable them to imagine future changes before acting. To him, even though religions express men’s hopes, they encourage them to seek changes in another world, which he condemns. In his view, men should take action during their lifetime. To him, utopias and religion share the same goal but have different ways to achieve it.

**Conclusion**

Despite the originality of Villiers’s style, the utopian discourse surrounding science, and electricity in particular, is not limited to his work but is widespread in nineteenth-century arts. Electricity is described in mystified terms not only by novelists and painters but by poets as well. Jean-Francois Giacometti compares it to an angel and a fairy. The references to myths and fairy tales continue to be used by twentieth-century poets from Henri Allorge, author of *Petits Poèmes Électriques*, to Francis Ponge, who compares electricity to a princess or a prostitute. Electricity becomes the muse of many artists such as Marinetti, founder of Futurism, who originally wanted to name his movement “electrismo”. In the twentieth century,

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technology is not only incorporated in art but inspires an entire artistic movement: Futurism. Its creators conceive it as a new religion and represent machines as divine. For Marinetti, “Futurism is grounded in the complete renewal of human sensibility brought about by the great discoveries of science.”¹⁷⁸ La Fée électricité will remain, for several decades, the allegory of a technological utopia.

CHAPTER 3: FUTURE PERFECT: TIME AND UTOPIA IN FILIPPO MARINETTI'S MANIFESTOS

“The world’s magnificence has been enriched by a new beauty: the beauty of speed.”

Introduction

This chapter draws on the hypothesis formulated in the introduction: at the end of the nineteenth century, utopias start to be represented in the future rather than in the past or on a remote island. When utopias were depicting communities in a distant country or island—such as Voltaire’s *Eldorado*—they were very often describing a nostalgic ideal, a golden age. Nineteenth-century literary utopias reflect a change in the representation of human happiness. Indeed, literary evocations of an ideal future were flowering at the time: Bodin’s *Le Roman de l’Avenir* (1835), Renouvier’s *Uchronie, l’Utopie dans l’Histoire* (1857), Emile Souvestre’s *Le Monde Tel Qu’il Sera* (1846), Edward Bulwer’s *La Race Future* (1871) Edward Bellamy’s *Looking Backwards* (1887) and William Morris’ *News from Nowhere* (1890) among others. With the exception of Sebastien Mercier’s *An 2440* (1770), most of these futuristic novels were published in the nineteenth century. The word “uchronie” itself—which can be broadly conceived as a utopia in time—was created by French philosopher Renouvier in 1857, highlighting a modification in the representation of time. The term is based on the combination of *utopia* and *chronos* (Greek for time).

We tend to consider the nineteenth century as a utopian century as we associate it with socialism, while the twentieth would be a period of dystopian fictions, from Orwell’s *1984* (1949) to Huxley’s *Brave New World* (1932). We tend to consider utopias as declining since 1848 and the term itself as pejorative and a synonym for totalitarian regimes. However, I argue that utopias are numerous in the twentieth century.

From 1909 to 1920, an entire cultural movement celebrated technology as a core value of a new aesthetic: Futurism. I argue that the movement, as defined by Marinetti as inspired by science, derives from the evolution in nineteenth-century utopian thought. This evolution implies a new relationship to the future—and to time in general—induced by new machines such as the railway, cars and aircrafts. Marinetti indeed states, “Futurism is grounded in the complete renewal of human sensibility brought about by the great discoveries of science. People today make use of the telegraph, the telephone, the phonograph, the train, the bicycle, the motorcycle, the automobile, the ocean liner, the dirigible, the aeroplane [sic], the cinema, the great newspaper (one day in the world’s life) without realizing that these various forms of communication, transformation and information have a decisive effect on their psyches.”

Even though Futurism is criticized for its relationship to fascism and its apology for war, the celebration of technology was without a doubt part of a techno-utopia. Of course, the discoveries of science cannot suffice to explain the birth of Futurism. Indeed, the muse of Futurism is not technology but *speed*. It is the feeling of speed rendered possible by technology that gives human beings the impression of...
stepping into the future. The first car races took place at the end of the nineteenth century. The Paris-Rouen was the first automobile competition in world history, right before the Chicago Times Herald competition of 1895. In 1899, an automobile in the shape of a bombshell reached 100 kilometers per hour in Belgium. After an experimental phase at the end of the nineteenth century, the first years of the twentieth century also marked the beginning of aviation. In 1909, Louis Bleriot crossed the English Channel on a plane. The same year, the first aviation school was created in Pau, France. Moreover, the first international air show took place in France, underlining the country’s role in the development of aviation.

1909 was also the year when Futurism was founded by Filippo Tommaso Marinetti, a man who, ever since his first visit to Paris in 1894, had been fascinated by the dizzying pace of Parisian modern life. He chose to write in French and spend part of his life in Paris because France was to him the country of modernity. Marinetti therefore aspired to renovate the form and content of arts and literature and turn them into suitable vehicles of expression. Marinetti repeatedly defined Futurism as a movement that was committed to “the enthusiastic glorification of scientific discoveries and modern machines.” Influenced by poets such as Emile Verhaeren or Walt Whitman who celebrated urban life and mechanization, Marinetti placed machines at the center of his aesthetics. The glorification of the machine thus became a salient feature of many of his manifestos and of Futurism as a cultural phenomenon.

Marinetti received a franco-italian education and wrote in both languages. According to his biographer Giovanni Lista, « On pourrait dire qu’il était français de tête et italien de cœur » (quoted in Ottinger 42).

Originally, Marinetti wanted to name his movement “electrismo”\textsuperscript{183}, which highlights the crucial role of technology in his movement. However, the scientific aspect of Futurism and poetry in general is often neglected by scholars in the humanities. Casimir Fusil’s book \textit{La Poésie Scientifique de 1750 à Nos Jours}, concentrates on natural science and does not incorporate technology. Furthermore, it is outdated, as it was published in 1917. The collection of essays edited by Gunter Berghaus, \textit{Futurism and the Technological Imagination} (2009), is one of the only recent scholarly works of interest on the topic and unfortunately contains only two articles on Marinetti. There is, therefore, a lack of scholarly papers on the role of technology in Marinetti’s texts and in Futurism in general.

This chapter will rely on philosophical and historical sources to examine the role of machines in Marinetti’s texts. First, drawing on philosophers’ reflections on time, such as Henri Bergson’s \textit{Durée et Simultanéité} (1922) or Jean-Jacques Wunenburger’s \textit{L’Utopie ou la Crise de l’Imaginaire} (1979), this chapter will begin by examining how technology has profoundly influenced our conception of time which is reflected in art starting in the nineteenth century and culminating with Futurism. Despite the dystopian visions and criticism from philosophers, such as Goethe\textsuperscript{184} in the nineteenth century or Paul Virilio\textsuperscript{185} today, speed— as any effect of technology— fascinated artists and the masses alike at the beginning of the century. In order to fully articulate the notion of speed, we will need to define the concepts of time, rapidity, intentionality, anticipation and project, based on the analysis of Bergson, Bernard Stiegler and Sartre. Mircea Eliade and Jean-Pierre Vernant will also

\begin{flushleft}
\textsuperscript{184} « Richesse et vitesse, voilà ce que le monde admire et ce vers quoi chacun tend. Chemins de fer, postes rapides, bateaux à vapeur et toutes les facilités de la communication, voilà ou s’en va le monde de la culture pour se surpasser, se sur-cultiver et par là, persévérer dans la médiocrité. » (Goethe, 294)
\end{flushleft}
be of particular interest in analyzing the conceptions of time in different cultures and time periods.

Second, the history of science will also enable me to shed light on the profound technological revolution that impacted Futurism. Science and technology studies are indeed crucial for a proper analysis of Futurism and its relationship to the notion of speed. For instance, the introduction of standard time at the beginning of the century is rarely discussed as a key factor in the evolutions of literature at the turn of the century. Standard time was first instituted in Great Britain at the end of the nineteenth century because of the railway, which explains why standard time was also called “railway time.” Standard time was adopted in France in 1911. Before the instauration of standard time, not only European countries but also different cities within the same country were not in the same time zone. This transformation was influenced by the revolution in nineteenth-century transportation. In 1814, a diligence needed 70 hours to go from Paris to Strasbourg while in 1897 a train needed only 7 hours and 20 minutes. In less than a century, the time spent on such an itinerary was almost decimated. The time spent in transportation, formerly expressed in days, was now marked in hours. Trains got faster and faster: in 1850, the speed of a train was 60 kilometers per hour while in 1900 it reached 100\textsuperscript{186}.

In this chapter, we will therefore rely on facts, data and analysis collected by historians of science. I will draw on the work of one of the most influential historians of science, philosopher Alexandre Koyré\textsuperscript{187}, who was influenced by Henri Bergson\textsuperscript{188} and Edmund Husserl’s works on science\textsuperscript{189}. I will also give consideration to other

\textsuperscript{186} Studeny, Christophe. \emph{L’invention de la vitesse, France, XVIIIème-XXème siècle}. Paris: Gallimard, 1995.
historians of science such as Michel Blay and Stephen Jay Gould. The history of science is often neglected by literary scholars, who, in this particular case, have tended to analyze Marinetti’s conception of speed and the future as a reaction to the Symbolist movement of the Fin de Siècle. It is true that Marinetti criticized what he called its “passéisme.” To him, those who did not encourage the mechanical future “affirmed once again the ridiculous nullity of nostalgic memory, of myopic history and the dead past.” However, the cult of technology in his writings cannot be explained by the rejection of previous literary conventions. I will argue that the role of technology in Marinetti’s aesthetic has been overlooked. Furthermore, the criticism of an aesthetic of nostalgia had already been expressed by the poet Maxime Du Camp, who, in Les Chants Modernes (1855) expressed a desire to incorporate science into literature, and into poetry in particular:

La science fait des prodiges, l’industrie accomplit des miracles, et nous restons impassibles, insensibles, méprisables, grattant les cordes faussées de nos lyres, fermant les yeux pour ne pas voir, ou nous obstinant à regarder vers un passé que rien ne doit nous faire regretter. On découvre la vapeur, nous chantons Vénus, fille de l’onde amère, on découvre l’électricité, nous chantons Bacchus, ami de la grappe vermeille. C’est absurde!

Marinetti was thus not the first artist to criticize the role of Antiquity in nineteenth-century literature. Contrary to what has been written, his movement was not based on

provocation or criticism but on technology. Indeed, according to Giovanni Lista, the idea of Futurism came to him after a car accident in 1908\textsuperscript{195}.

This new relationship to time was made possible by the invention of new machines in the nineteenth century and their use by an increasingly higher number of people at the beginning of the twentieth century, during which the use of cars and trains was affordable not only for the aristocracy but also for the bourgeoisie. This period corresponds to the beginning of cinema invented by Louis and Auguste Lumièrè in 1895. One of their first films recorded the arrival of a train in a station, emphasizing the link between the invention of cinema and the growing need to capture movement and speed generated by new means of transportation.

After being expressed in the nineteenth century, speed is celebrated as the foundation of Futurist art by Marinetti’s manifestos, published between 1909 and 1924. Based on textual analysis of these texts, the second part of this chapter will analyze the representation of speed in Futurism, its impact on rhetorical devices, and even on the conception of literature as a whole. The new speed records of the early twentieth century and the new aesthetics that emerged gave the impression that men had entered a new techno-utopian era.

The last section of this study will be devoted to what David Noble calls “the religion of technology.” Indeed, Marinetti goes further than Zola in his cult of technology. His manifesto “nouvelle religion morale de la vitesse” (1916) criticizes Christianity and advocates for the creation of a new cult of speed. I will draw on David Noble’s essay \textit{The Religion of Technology} (1997) and on Nietzsche’s influence on Marinetti to analyze the implications of this new religion.

1. Utopia and the Future

1.1. The Concept of Utopia and the Conscience of Time

According to Pascal in *Les Pensées*, human beings are constantly escaping into the past or the future, regretting and hoping. Men are thus doomed to dissatisfaction:

Nous ne nous tenons jamais au temps présent. Nous anticipons l'avenir comme trop lent à venir, comme pour hâter son cours ; ou nous rappelons le passé pour l'arrêter comme trop prompt : si imprudents, que nous errons dans les temps qui ne sont point nôtres, et ne pensons point au seul qui nous appartient ; et si vains, que nous songeons à ceux qui ne sont rien, et échappons sans réflexion le seul qui subsiste. C'est que le présent, d'ordinaire, nous blesse. Nous le cachons à notre vue, parce qu'il nous afflige ; et, s'il nous est agréable, nous regrettons de le voir échapper. Nous tâchons de le soutenir par l'avenir, et pensons à disposer les choses qui ne sont pas en notre puissance pour un temps où nous n'avons aucune assurance d'arriver. Que chacun examine ses pensées, il les trouvera toutes occupées au passé et à l'avenir. Nous ne pensons presque point au présent ; et, si nous y pensons, ce n'est que pour en prendre la lumière pour disposer de l'avenir. Le présent n'est jamais notre fin : le passé et le présent sont nos moyens ; le seul avenir est notre fin. Ainsi nous ne vivons jamais, mais nous espérons de vivre ; et, nous disposant toujours à être heureux, il est inévitable que nous ne le soyons jamais.  

What Pascal refers to is what can be called *psychological time*. Indeed, there are several ways to define time. There is *natural time*, which is cyclical and follows the rhythm of nights, days and seasons. There is the *chronological* time of the calendar,

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which is linear. As for psychological time, it is the time of consciousness and pressure, the pressure of efficiency and action, the growing pressure of time as time goes by and the fear of death intensifies. The concept of speed finds its origins in the pressure of psychological time as speed often serves as a synonym for efficiency and power.

But is natural speed a synonym of pressure? It seems necessary to differentiate rapidity from speed. Rapidity can be found in nature. A leopard is rapid but not fast because there is no pressure or consciousness of time. Time generates pressure for humans because there is a shift between, on the one hand, the speed of thought that anticipates and projects actions and, on the other hand, the time needed to accomplish this same action. For instance, when one leaves home to go to work, they are already mentally at work but have to endure a time in transportation before they start working.

This is what Sartre and Husserl, among other philosophers, call intentionality—which is the movement of consciousness of an object: "le mot intentionnalité ne signifie rien d’autre que cette particularité foncière et générale qu’à la conscience d’être conscience de quelque chose."\(^{197}\) In relation to time, it is a projection, an escape, a desire to be already elsewhere\(^{198}\). In that sense, speed is a project, an escape from the present into the future. It is war against an unsatisfying present.

A utopia reflects this longing as it is often represented in the past or the future. Even when utopias are situated on an island or another planet, the setting is

\(^{197}\) Husserl, op.cit., p.28
very distant from the context of writing and often described as a nostalgic Golden Age. Ernst Bloch in *The Principle of Hope* (1986) shares common points with Pascal’s views. As analyzed by Bloch, utopias are part of the human conscience. What Bloch calls the Not-Yet-Conscious or Not-Yet-Being is central to human thought. Men cannot be satisfied with the conditions of their existence and with *status quo*. Creating utopias is a universal impetus, stemming from humankind's feeling of incompleteness.

After defining briefly the notions of time and speed, I would argue that utopia is in itself related to the concept of speed. To sociologist Alain Touraine, utopias are always anticipations, whether they are set in the past or the future: “des critiques du socialisme utopique à Karl Mannhein, l’utopie a été définie comme une anticipation, comme une pensée en avance sur l’histoire.” Indeed, utopias are defined as *projects* in dictionaries.

The notion of project is central to the definition of utopias. From Latin *prōiectum* (“throw forth, extend; expel”), the term implies a projection of individuals into the future. For Sartre, men are projects and constantly imagine themselves in the future. According to sociologist Jean-Pierre Boutinet in his *Anthropologie du Projet* (2005), it is an “anticipation opératoire partiellement déterminée.” It is partially determined because it is never fully realized. According to philosopher Jean-Jacques Wunenburger, utopias are linked to the future: “l’utopie est bien centrée sur une sorte de mythe du possible et donc du futur.” To him, utopias started to replace myths in

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the sixteenth century. The conception of the Golden Age was replaced by the idea of an ideal future.

1.2. Utopia and the Time-Space Nexus

The shift in the representation of utopias in the nineteenth century can only be explained by considering how the time-space nexus changed, starting in the sixteenth century, under the influence of a new cartography and topography upon the discovery of the New World. Before the sixteenth century, Paradise was located on the map. For centuries, religion and science could both influence cartography without any major contradiction. But the discovery of the New World skewed this equilibrium. When several islands such as Sri Lanka were conquered by Portugal in the sixteenth century, sailors thought they were the Fortunate Isles, which were legendary islands at times treated as a simple geographical location and sometimes as a winterless, earthly paradise inhabited by the heroes of Greek mythology. They are described by Plutarch as islands “where the air was never extreme, which for rain had a little silver dew, which of itself and without labor, bore all pleasant fruits to their happy dwellers, till it seemed that these could be no other than the Fortunate Islands, the Elysian Fields.”

Furthermore, in the Renaissance, men were trying to locate heaven on maps, since paradise was thought to be located on earth, but had been inaccessible to men since the Fall. In 1690, scientists Joseph Moxon and Pierre-Daniel Huet both created maps locating the Garden of Eden in the Persian Golf, while, in 1780, Emanuel Bowen located the terrestrial Paradise closer to the Caspian Sea.

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When arriving in America, Christopher Columbus thought he had discovered a paradise and wrote in a letter to Dona Torre in 1500: “Du nouveau ciel et de la nouvelle terre dont parlait Notre Seigneur à travers Jean dans l’Apocalypse après l’avoir mis dans la bouche d’Isaïe, Celui-ci me fit le messager et me montra cette région.” According to Mircea Eliade’s article “Paradise and Utopia,” the assimilation of the New World to an earthly paradise was a new eschatology: “The colonization of the two Americas began under an eschatological sign: people believed that the time had come to renew the Christian world, and the true renewal was the return to the Earthly Paradise or, at the very least, the beginning again of sacred history, the reiteration of the prodigious events spoken of in the Bible.” Europe was considered to be an old and corrupted continent, doomed to decadence and destruction. People believed in the Apocalypse of the Bible, which predicted that a discovery would precede the end of the world. When America was discovered, colonizers thought the prophecy would come true. For centuries the location of Paradise and other mythological places remained on the map, coexisting with the scientific location of newly discovered land.

But the progress of navigation considerably modified the conception of ideal lands. In the sixteenth century, political utopias started to be represented differently from the Eden-like spaces described in myths. They were urban spaces in opposition to the gardens that prevailed before. Indeed, Campanella’s City of the Sun (1602) and Thomas More’s Utopia (1516) are cities, whereas Hesiod’s description of the Golden

Age in *Works and Days* was one of a garden. Illustrations exemplify this evolution in the representation of ideal spaces:
But despite the religious changes introduced by the Reformation and later by the Enlightenment in the eighteenth century, most of the utopias—especially fictional utopias—were still described until the middle of the nineteenth century as gardens of Eden, and as places created by God or a divine Nature. French literature contains numerous examples of Eden-like utopias such as Candide (1759), Le supplément au voyage de Bougainville (1772), and Paul et Virginie (1787). They share the same characteristics: abundant and luxuriant vegetation, ideal climate, innocence and nudity of the inhabitants, generous nature, and absence of sin. Paul et Virginie contains all of these traits. The two main characters are uneducated: "ils étaient ignorants comme les créoles, et ne savaient ni lire ni écrire. [...] Jamais des sciences inutiles n’avaient fait couler leurs larmes ; jamais les leçons d’une triste morale ne les avaient remplis d’ennui."206 They also have no knowledge of sin: "Chaque jour était pour ces familles un jour de bonheur et de paix. Ni l’envie ni l’ambition ne les tourmentaient."207 They have never experienced envy, one of the seven deadly sins, and live in happiness and peace, also characteristics of utopias. They are often represented as naked: “Je n’arrivais point de fois ici que je ne les visse tous deux tout nus, suivant la coutume du pays.”208 They live in a garden overflowing with fruits and flowers, where rocks and trees are given names. One of the trees is named “concorde,” intended to oppose the tree of knowledge that generated discord. In eighteenth-century utopian fictions, men still appear as submitted to a Divine Nature, which implies that religious and political

207 Bernardin, op.cit., p.112
208 Bernardin, op.cit., p.99
change are not the only factors influencing utopian thought. According to philosopher Simone Debout, the number of utopias published in the eighteenth century is far inferior to the plethora of utopias published in the nineteenth century, often considered the century of utopias. To Fatima Vieira, in her article “The Concept of Utopia”, the Enlightenment transformed utopian thought. To Mikael Corre—journalist specializing in religious studies—it is also in the eighteenth century that the location of Paradise changed: “un tournant s’opère au 18ᵉ siècle: le progrès de la science et les différences entre les cultures rendent ces localisations du paradis de moins en moins plausibles. Le 18ᵉ siècle a tué le paradis terrestre.” To historian Bronislaw Baczko, author of Lumières de l’Utopie (1978), utopias have even replaced Paradise.

However, I will argue that it is only a century later—after 1850—that a shift occurred in utopian literature thanks to scientific and technical progress. Under the combined influence of colonization and scientific progress, cartography evolved to produce maps without any geographical representations of Paradise. Furthermore, most of the inhabitable lands had been discovered, which can explain the multiplication of utopias. I would argue that it could also explain their location in the future rather than on an island. Heaven is not on earth anymore. It is ahead of us. In the nineteenth-century, the conceptions of both space and time had irrevocably changed.

1.3. From a Circular to a Linear Representation of Time

In ancient Greece, time was conceived as cyclical. The image of the circle thus dominated multiple aspects of Greek life, leading historian Jean-Pierre Vernant to talk about a myth of circularity in his essay *Mythes et Pensée chez les Grecs* (1974). For instance, the circle influenced the architectural organization of the city, where everything formed a circle around the agora. According to physicist and historian of science Remy Lestienne in his essay *Les Fils du Temps*, this phenomenon explains the concept of “eternal return,” found in many cultures. Indeed, the Greek philosophers of Antiquity such as Parmenides very often conceived time as cyclical, rather than linear. To Stoic philosophers, the world ends but is recreated.

A projection into the past or the future is linked to a linear conception of time and, as such, related to a certain historical and geographical context. According to philosopher Serge Carfatan in his essay *Conscience et Connaissance de Soi* (1992), our linear conception of time derives from religion. This conception is indeed found in several monotheist religions in which the idea of creation involves also the idea of an eventual end and, as a consequence, the idea of linearity.

In the eighteenth century, the apparition of the notion of progress confirms this linearity. The impression of moving forward is central in the philosophy of the Enlightenment. Modern physics confirms this notion by the law of causality: every effect should be preceded by a cause. This law being incompatible with a cyclical conception of time, the linear model prevailed. In 1927, astrophysicist and historian of science Arthur Eddington represented time as an arrow. His concept of Time’s Arrow is still applied today.

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1.4. The Era of Speed

While analyzing the relationship between the concepts of time and utopia, we have observed that utopias were always anticipations of the future and that this projection into the future intensified over several centuries under the influence of the scientific and technological discoveries. Hence, the growing importance of the notion of speed from the Industrial Revolution until our contemporary debate on post-modern acceleration.\footnote{Rosa, Hartmut. Accélération: une Critique Sociale du Temps. Vers une Théorie Critique de la Modernité Tardive. Trad. Thomas Chaumont. Paris : La Découverte, 2010.}

Scientific discoveries, from the Copernican Revolution through the World Wide Web have profoundly impacted humans’ conception of movement and speed, a conception reflected in art. According to historian of science Alexandre Koyré in his essay *Du Monde Clos à l’Univers Infini* (1973), the Copernican Revolution, based on a heliocentric model, transformed a vision of the world that went from closed to infinite, which gave birth to what he calls “the era of speed” in the seventeenth and eighteenth centuries. Indeed, Copernicus’ theory placed the sun rather than the earth at the center of the universe, which triggered a revolution in the representation of the world in which our planet is moving around the sun instead of being static, as it was thought before. The concept of speed truly emerged later with the apparition of calculus developed by Newton and Leibniz. Thanks to calculus, it was discovered that the speed of an object was the distance travelled by the object divided by the duration of the interval of time.

According to historian Christophe Studeny in *L’invention de la Vitesse* (1995), the era of speed shifted later in the eighteenth century with the development of transportation: “La vitesse n’est pas venue au monde par l’intrusion inopinée d’un
nouveau mode de transport. Encore fallait-il qu’elle fût recherchée. Le besoin de se déplacer, le goût du mouvement rapide sʼannonce dans la seconde moitié du dix-huitième siècle, pour ne sʼénoncer clairement et dans des proportions encore très limitées quʼau début du siècle suivant.”  

For instance, Voltaire expressed in *Micromégas* (1752) the fascination for speed experienced by two men coming from other planets upon their arrival on earth: “Comme ces étrangers-là vont assez vite, ils eurent fait le tour du globe en trente-six heures.”  

The desire to connect nations through transportation enabled discoveries to be made and is not particular to the nineteenth and the twentieth centuries.

As the speed of machines dramatically changed over a few decades, the perception and representation of speed evolved as well. The nineteenth-century press and literature are filled with allusions to change in the time-space nexus, described in travel narratives such as *Voyage en France* (1851) by Charles Delattre: “Ne semble-t-il pas que l’espace soit supprimé par des moyens plus prompts à le traverser ; que le temps s’efface par la rapidité avec laquelle on va du Nord au Midi, du couchant au levant ? Les chemins s’abrégent en se multipliant.”  

It seemed that future changes would be quick and could be imagined more easily. A discourse on future discoveries was flourishing in newspapers such as *Le Siècle*: “On songe déjà avec délice à l’époque prochaine où le flâneur parisien pourra aller déjeuner à Bordeaux, dîner à Genève, passer sa soirée au théâtre de Bruxelles et revenir coucher à Paris.”  

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2. The Notion of Speed in Futurism

2.1. Futurism, a Techno-Utopia

In this section, I will argue that it is the speed of machines that nourishes the utopian dimension of Futurism. Futurism is indeed an entire artistic movement based on techno-utopian ideals. The movement is a criticism of the present and a dream about the future. To Marinetti “all hope should be in the Future.” He even goes so far as to declare the future to be greater than the past: "The past is necessarily inferior to the future. That is how we wish it to be. How could we acknowledge any merit in our most dangerous enemy: the past, gloomy prevaricator, execrable tutor?" In this future, men will fulfill their desires and master time and space thanks to machines:

Nous croyons à la possibilité d’un nombre incalculable de transformations humaines, et nous déclarons sans sourire que des ailes dorment dans la chair de l’homme. Le jour où il sera possible à l’homme d’extérioriser sa volonté de sorte qu’elle se prolonge hors de lui comme un immense bras invisible, le Rêve et le Désir, qui sont aujourd’hui de vains mots, règneront souverainement sur l’espace et sur le temps domptés.

As in many techno-utopias, machines reduce factory labor: “Ended now the need for wearisome and debasing labors. Intelligence finally reigns everywhere. Muscular work ceases to be servile” In his utopia, men will no longer walk on earth but will fly in personal monoplanes. Men will also experience eternal youth: “l’homme multiplié dont nous rêvons […] ne connaîtra pas la tragédie de la vieillesse

Marinetti, Selected Writings, op. cit, p.82
Marinetti, Selected Writings, op. cit, p.68
Marinetti, Le Futurisme, op.cit. p.113
Marinetti, Selected Writings, op. cit, p.106
et de l’impuissance.” This element is a topoi found in many utopias such as the Golden Age described by Hesiod in *Works and Days*: “Ils vivaient comme des dieux, le cœur libre de soucis, à l’écart et à l’abri des peines et des misères : la vieillesse misérable sur eux ne pesait pas ; mais, bras et jarrets toujours jeunes, ils s’égayaient dans les festins, loin de tous les maux.” However, what is God’s creation in Hesiod becomes man’s creation in Futurism: thanks to science, men will live longer.

Humans will also share God’s power of creation by building robots. This idea can be found in many Futurist texts such as Russian director Tziga Vertov’s manifesto on cinema:

Moi, ciné-œil, je crée un homme beaucoup plus parfait que celui qu’a créé Adam, je crée des milliers d’hommes différents d’aprèrs différents dessins et schémas préalables. Je suis le ciné-œil. À l’un je prends les bras, plus forts et plus adroits, à l’autre je prends les jambes, mieux faites et plus véloces, au troisième la tête, plus belle et plus expressive, et, par le montage, je crée un homme nouveau, un homme parfait. As is the character of any utopia, the new man is perfect. By creating a new man, humans fulfill the fantasy of possessing God’s power of creation. This motif, already present in Mary Shelley’s *Frankenstein* (1818) and Villiers’ *Eve Future* (1886), evolved in the twentieth century. In many ways, Vertov’s man is a cyborg, independent of nature and animality. Indeed, a mechanical body is controllable and perfectible:

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223 Marinetti, *Le Futurisme, op.cit.*, p.115
The machine makes us ashamed of man’s inability to control himself, but what are we to do if electricity’s unerring ways are more exciting to us than the disorderly haste of active men and the corrupting inertia of passive ones? Saws dancing at a sawmill convey to us a joy more intimate and intelligible than that on human dance floors. For his inability to control his movements, WE temporarily exclude man as a subject for film. Our path leads through the poetry of machines, from the bungling citizen to the perfect electric man. […] The new man, free of unwieldiness and clumsiness, will have the light, precise movements of machines, and he will be the gratifying subject of our films. 226

It was speed and movement that nourished the utopian imagination of the time, the “poetry of machines” and the perfect man. As expressed in previous chapters, electricity is the technical revolution that profoundly changed the way we write and perceive literature. The speed of light translates into a new relationship to time. Marinetti even considered that his aesthetic would “notably diminish the concept of time” and that “we will arrive at the abolition of the year, the day, and the hour.” 227

2.2. Speed in Marinetti’s Manifestos

Marinetti’s *Technical Manifesto of Futurist Literature* (1912) begins with the evocation of a machine. It is on an airplane that Marinetti realized that literature as he knew it was obsolete and that the time had come to write a new manifesto in order to free literature from ancient conventions and syntax in particular, which explains the first sentence of the manifesto: “Ce fut en aéroplane, assis sur le cylindre à essence, le ventre chauffé par la tête de l’aviateur, que je sentis tout à coup l’inanité ridicule de la

227 Marinetti, *Selected Writings*, op.cit., p.81
vieille syntaxe héritée de Homère.”

The machine triggers the realization that literature needs to change. The invention of new machines merely described in nineteenth-century literature, became the instigator of a literary revolution in the twentieth-century. In the manifesto, it is the machine itself—specifically the propeller of the plane—that is the enunciator of the list of new principles of the futurist movement: “Et l’hélice ajouta: 1- Il faut détruire la syntaxe en disposant les substantifs au hasard de leur naissance. 2- Il faut employer le verbe à l’infini.” The other principles also establish new orientations for Futurist literature. The machine appears personified, as a God pronouncing the Ten Commandments of literature. The new and regenerated literature Marinetti wishes to create is compared to the plane—which had been recently created in 1890—and conceived as more modern than a four-wheel vehicle: “A quoi bon se servir encore de quatre roues exaspérées qui s’ennuient, du moment qu’on peut se détacher du sol? Délivrance des mots, ailes planantes de l’imagination.”

It is the speed of machines in particular that leads to a stylistic change. Marinetti’s manifestos are filled with expressions reflecting the speed, dynamism, and violence of cars, planes and trains. For instance, speed can generate the usage of analogies. Two nouns can be juxtaposed. Marinetti gives several examples such as “homme-torpilleur” and “place-entonoir.” To him, “la vitesse aérienne ayant multiplié notre connaissance du monde, la perception par analogie devient de plus en

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229 Marinetti, op.cit., p.63
230 Marinetti, op.cit., p.63
231 Marinetti, op.cit., p.62
plus naturelle à l’homme.” Human beings are like machines and the literature they produce should reflect this dimension.

The identification of the human being with the motor implied for Marinetti the possibility of a prosthetic body, with the increased potential of new external organs. As a grand visionary, he imagined the realization of a perfect synchronization between human beings and machines in which the latter would become additional organs whose extraneousness would be annulled by human will power. Marinetti’s vision of the prophetic body originated from Darwin, Lamarck and Carrel’s theories, which seemed to guarantee that animal and human bodies would progressively adapt to the transformation of their living environment. In the late nineteenth century, several theorists of theatre such as Maurice Maeterlinck suggested the substitution of living actors with marionettes and androids on the stage. Eventually, the ambiguity between living body and mechanical object became one of the main features of Futurist Synthetic Theatre. The mechanization of movement would contribute to the formation of an actor whose personality would be totally concealed, similar to a marionette. The “mechanical man, one who will have parts that can be changed” was an obsessive presence in the anatomical and sanitary culture of the late nineteenth century and had become an important feature of wax museums and travelling anatomy exhibitions, usually presented at world fairs.

In the Technical Manifesto of Futurist Literature, Marinetti thus uses a scientific vocabulary to describe a literature that, in his opinion, should analyze “molecules” and “electrons” rather than “feelings.” Artists should not only describe machines but also create a literature that would imitate the functions of machines and

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232 Marinetti, op.cit., p.62
233 Marinetti, Selected Writings, op.cit., p.114
express what one might call “a mechanical style”: “nous voulons donner en littérature la vie du moteur. [Il faut] écouter les moteurs et reproduire leurs discours. […] Après le règne animal, voici le règne mécanique qui commence![…] nous préparons la création de l’homme mécanique aux parties remplaçables.”

In the same manifesto, Marinetti compares his work to a speeding car: “[mon oeuvre] aboutit au premier manifeste futuriste, synthèse d’une cent-chevaux lance aux plus folles vitesses terrestres.”

To him, literature should be like a plane taking off, set free from earthbound conventions. Literature should also be as fast as a machine: “love of speed, abbreviation and the summary. ‘Quick! Give me the whole thing in two words.’” Marinetti advocates the creation of a “telegraphic lyricism.”

As developed in the previous chapters, it is electricity that animates the new machines and fascinates the masses at the turn of the century, and generates the impression of moving “at the speed of light.” In her book When Old Technologies were New (1988), communication scholar Carolyn Marvin compares the electrical revolution starting with the telegraph to the invention of the printing press by Gutenberg (Marvin, 3). It is no surprise that Marinetti was fascinated by electricity in general. In the Manifesto of Futurist Dance (1917) for example, he mentions the American dancer Loie Fuller who used electricity in her performances by employing magic lanterns that projected various colored lights onto the costume’s cloth. Marinetti states: “We Futurists prefer Loie Fuller and the Negroes cakewalk [making use of electric light and mechanical devices].” Indeed, Loie Fuller made extensive

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234 Marinetti, Manifestes, op.cit., p.64
235 Marinetti, Le Futurisme, op.cit., p.65
236 Marinetti, Le Futurisme, op.cit., p.98
237 Marinetti, Le Futurisme, op.cit., p.104
238 Marinetti, Selected Writings, op.cit., p.210
use of electricity and performed publicly in music halls and at events such as the Universal Exhibition of 1900. Film and hand-colored versions of the Serpentine Dance circulated very early. These recordings made by pioneers of early cinema, such as Edison, Gaumont and Nadar, could be viewed publicly in music halls or privately in *kinetophones*, an invention by Edison, which were widely available in the amusement parks of the time. Fuller’s personal acquaintance with Edison enabled the dancer to conduct experiments with the fluoroscope and later with radium, creating in 1904 *La Danse du Radium*.

Although Marinetti did not make direct reference to her, the influence of Loie Fuller’s dance on the founder of Futurism is most clearly exemplified in his 1913 manifesto, *The Variety Theatre*. The concept of the “Futurist marvel,” outlined in this text, offers some similarities to the conceptual premises of the *Serpentine Dance*. Fuller’s dance was a showcase of the modern gadgetry and wondrous inventions that Marinetti defined as the core of “Futurist marvel.”239 “[D]ancers *en point*, whirling around like spinning tops”240 is an indirect reference to the American performer: the image of a quick, spiral movement of a swarm of cloth in space points to the precedent of the *Serpentine Dance*.

Marinetti insists on the importance of electricity in theatre. In *The Variety Theatre*, he describes electricity as a revolution: “it is the lively electric light that triumphs, while the feeble, faltering moonlight is defeated.”241 Fuller was indeed the first performer who actively made electric light a fundamental component of the way in which she revealed herself on stage. Loie’s designation as *la fée de la lumière* played upon the contemporary iconology attributed to the new illumination

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239 Marinetti, *Selected Writings*, op.cit., p.186
240 Marinetti, *Selected Writings*, op.cit., p.187
241 Marinetti, *Selected Writings*, op.cit., p.189
technology, the *fée électricité*, generally portrayed as a woman, clad in an ancient Greek costume, with light rays shooting from her head, as described in chapter 2 of this study. Marinetti himself referred to electricity as a feminine figure: “unique, divine mother of future humanity, her body glowing a vivid silver, Electricity with her thousand flashing, violet-colored arms.”

2.3. Simultaneity

I will argue that the notion of simultaneity also emerged in the literature of the early twentieth-century Avant-Garde movement in reaction to the speed of machines and the impression that for the first time in history one could be *simultaneously* and *instantly* in different places through the telephone or the telegraph. This simultaneity was expressed visually by Avant-Garde artists. Marinetti as well as other artists of his time decided to express movement through literature and images. Blaide Cendras’ poem *Prose du Transsibérien* (1913), illustrated by Sonia Delaunay (see fig. 3), is the most famous example of this literary revolution. Rather than an illustration, the image is part of the poem. The circles illustrate the movement of a wheel or the earth. This poem is considered the first “simultaneous” poem. Sonia Delaunay declared in an interview: “Le sujet du poème relate un voyage sur la transsibérienne, et nous créions dans la plus pure spontanéité. Nous étions en pleine modernité, la vitesse, qui était la naissance de tout.”

242 Marinetti, *Selected Writings*, op.cit., p.98-99
We will see in chapter 4 that the notion of simultaneity influenced the conception of what will be called “virtual spaces” during the computer revolution of the end of the twentieth century. One can be simultaneously and virtually in different places at the same time.

2.4. Henri Bergson’s Influence on Marinetti

Marinetti’s simultaneity was influenced by philosopher Henri Bergson’s conception of time. In his essay *Durée et Simultanéité, à propos de la Théorie d'Einstein* (1922), Bergson claims that the duration is composed of our memories. Our present perceptions are influenced by our memories, so that the present and the past—which we imagine to be separated—seem simultaneous. Our perception produces simultaneity. Bergson had a notable impact on Marinetti as well as other artists.
At the beginning of the century, and more precisely between 1900 and 1914, Henri Bergson had a considerable influence on the intelligentsia and on the Avant-Garde movement, whose members attended his seminars religiously at the College de France. His works were translated into Italian, which might be why Marinetti had access to his theories: “C’est à Henri Bergson que Marinetti emprunte sa poétique vitaliste, sa conception d’un moi en perpétuel devenir, son lyrisme qu’il fait culminer dans un rêve de fusion cosmique.”

Marinetti thus drew on Bergson’s philosophy to valorize notions such as movement, dynamism, simultaneity, and duration. According to Azouvi, these notions durably influenced the Avant-Garde in general:

C’est avec cet arsenal de notions, que les futuristes (ainsi que plusieurs cubistes et certains théoriciens de l’esthétisme anarchiste) se tournent vers Bergson. Il est le philosophe qui va permettre à la peinture du vingtième siècle de penser la révolution dont elle est grosse : la substitution de la durée à l’espace, du dynamisme au statisme pour rendre aux tableaux la vie dont elle a manqué jusqu’ici. Bergson est le philosophe des avant gardes.

Bergson’s first famous essay was Le Rire (1900) in which he defines laughter as the first mechanical human act: when we laugh, we act like machines. But what made his reputation was his theory of “l’élan vital” To him, immobility and eternity have less value than movement and time, which shocked several intellectuals but inspired many others. Marinetti’s conception of speed might also have been influenced by Bergson’s theory of time in Durée et simultanéité in which he differentiates time— which is measurable by clocks and divisible into equal portions—

245 Azouvi quoted in Ottinger, op. cit., p.82
from *duration* which is our feeling of time. It is the human conscience of becoming, changing, and projecting. To Marinetti, this conscience was stimulated by speed, which permitted the creation of a new man, of what he called “l’homme multiplié”, liberated from nature and comparable to a god.

3. The Cult of Speed

3.1. Speed at the Universal Exhibitions: a Race Towards the Future

The valorization of speed was part of the cult of Progress celebrated by the Universal Exhibitions. In 1900, the first moving sidewalk is exposed at the fair in Paris. It was invented by two American engineers and had already been exposed at the Chicago fair of 1883. In *When the Sleeper Wakes* (1899), H.G Wells imagines a city of the future in which all the roads would move: "It was not a roadway at all, as Graham understood such things, for in the nineteenth century the only roads and streets were beaten tracks of motionless earth, jostling rivulets of vehicles between narrow footways. But this roadway was three hundred feet across, and it moved; it moved, all save the middle, the lowest part. For a moment, the motion dazzled his mind." By portraying a nineteenth-century man in a city of the future, Wells underlines the astonishment of the populations of the *Fin de Siècle* for which speed was dazzling.

At the World Fair in Paris, the electric sidewalk was called “rue de l’avénir,” which emphasizes the parallel between technology and projections into the

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future (see fig.4). Represented in early cinema—filmed by Thomas Edison and Georges Méliès—and visited by millions of Parisians and tourists, it was one of the main attractions. As mentioned in chapter 1, the fair attracted nearly fifty-one million people coming from various nations across the globe, in a country of only forty-one million inhabitants. The fun of getting on and off this electric three-tiered sidewalk—one level stationary, the next moving at 4 km per hour, the third at 9 km per hour—made it one of the fair’s greatest amusements. It could accommodate 14,000 people at once. On Easter day, 70,000 people tried it, which was more people than transported by buses and trolleys that day, taken by approximately 40,000 people.

![Image](image.png)

**Fig. 4. Le Train Électrique et le Trottoir Roulant au Carrefour de l'École Militaire.** 1900. Agence Photographique Roger-Viollet, Paris.

Speed remained a notable attraction at the World Fairs for several decades, in the exhibitions of trains and cars, always associated with celebration of the future. At the 1939 New York World's Fair, Norman Bel Geddes designed a ride named “Futurama” that presented a possible model of the world twenty years into the future (1959–60). Like the electric sidewalk, the Futurama exhibition was subsequently presented as one of the 1939 New York World Fair’s main attractions, considered the
"number-one hit show."

Sponsored by the General Motors Corporation, the installation was characterized by its automated highways. To architect Adnan Morshed, the installations and discourse about the exhibit presented a utopian dimension of an ideal America of the future, reinforced by the fact that there wasn't an interstate freeway system in 1939 and that few Americans owned a car. Newspapers expressed this utopian dimension. In *Business Week*, a journalist compared Bel Geddes’ vision to a prophecy, emphasizing the sacred dimension of technology: “More than 30,000 persons daily, the show’s capacity, inch along the sizzling pavement in long queues until they reach the chairs which transport them to a tourist’s paradise. It unfolds a prophecy of cities, towns, and countryside served by a comprehensive road system.”

The general theme of the fair was “The World of Tomorrow,” underlining the link between technology and futuristic visions.

At the same New York fair, speed was also praised through the construction of the statue of Speed, by Joseph E. Renier (see fig.5). The statue resembles Mercury or Pegasus, two well-known speedsters. According to the Official Guide Book of the New York World’s Fair, it was a “symbol of the breath-taking speed of today’s Methods of communications.”

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3.2. Marinetti’s 1916 Manifesto “Religion Morale de la Vitesse”

In his manifesto *religion morale de la vitesse* (1916), Marinetti creates and celebrates a religion of speed: “Si prier veut dire communier avec la divinité, courir à grande vitesse est bien une prière. Sainteté de la roue et des rails. Il faut s’agenouiller sur les rails pour prier la divine vitesse.”

Marinetti’s discourse on a religion of speed is inscribed in a general cultural discourse surrounding technology, as mentioned in chapter 1. For instance, historian of science John J. White claims that wireless telegraphy was also the object of a cult: “news could be transmitted and received virtually instantaneously thousands of miles away. The telegraphic dissemination of the new word of science became the technological equivalent of the spreading of the Gospel, and writers treated the subject with an appropriate religiosity, often using the imagery of the biblical word” (White, 148).

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251 Marinetti, *Le Futurisme, op.cit.*, p.367
According to historian of science David Noble, humans now have a religious relationship to technology. More precisely, religion “prepared the soil for the scientific outburst,” and technology is a result of “theological reflection.” In this section, we will see how Futurism illustrates Noble’s theory by treating machines as fetishes at the center of an aesthetic program. While nineteenth-century artists sprinkled their texts with simple references, Futurism dedicated an official cult to machines.

Marinetti criticizes the cult devoted to women’s bodies in nineteenth-century aesthetics and wishes to replace it with a celebration of the beauty of machines. Interactions between men and women should be limited to reproduction. Men’s companions should be machines.

Les moteurs, disent-ils, sont vraiment mystérieux… Ils ont des caprices… des fantaisies inattendues… On dirait qu’ils ont une personnalité, une âme, une volonté… Il faut les flatter, les traiter avec des égards et ne jamais les brusquer ni les éreinter. Si vous agissez ainsi, vous verrez tout à coup cette machine de fonte et d’acier, ce moteur construit suivant des chiffres précis donner non seulement tout son rendement mais le double et le triple, bien plus et bien mieux que tout ce laissait prévoir les calculs de son constructeur : son père.

Machines enable man to fulfill his dream of creation, as machines are built by man.

Described as women, machines are Futurist goddesses: “La Machine donne aujourd’hui le rythme de la grande âme collective et des différents individus créateurs. La Machine scande le chant du génie. La Machine est la nouvelle divinité qui éclaire,

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253 Marinetti, Le Futurisme, op.cit., p.112
The notion of novelty expressed by Marinetti is crucial in Futurism, a movement based on the advent of a new man transformed by the goddess of speed, a goddess who gives him nearly divine powers. As God, humans can be simultaneously in different places through the telephone and reach the sky with airplanes. Marinetti’s new man is what he calls “a multiplied man.”

3.3. Übermensch (Nietzsche)

In 1911, Marinetti published his manifesto *Multiplied Man and the Reign of the Machine*. The multiplied man is not a superman but a man transformed by technology and capable of surpassing himself through combat and not necessarily through war, which is what many critics tend to consider. To Marinetti, socio-historical changes have led to an anthropological mutation. The multiplied man will appear thanks to an aesthetic revolution.

The notion of “multiplied man” can be explained by the technological context. Indeed, the first experiments in automobile and aviation profoundly influenced not only transportation but also the conception of humanity in general. For the first time, men could defy the laws of gravity and leave their natural habitat by flying in an airplane. To Marinetti, new technologies mark the advent of a new man,

254 Marinetti, *Le Futurisme, op.cit.*, p.223-224
of an Übermensch. However, for Nietzsche, the advent of a new man will occur through a philosophical revolution rather than an aesthetic one.

For Marinetti, the Futurist “multiplied man” he wished to create is similar to a machine and as powerful as a god. In this sense, he has been compared to the Übermensch, or superman, described in Nietzsche’s Also sprach Zarathustra (1883). This übermensch has the nature of God and its conception derives from humans’ desire to overcome nihilism and believe in something: “L’homme préfère encore vouloir le néant plutôt que ne pas vouloir.” Human beings thus need to believe in the übermensch, which, according to Nietzsche, is the incarnation of their will to gain power (Verlangen nach Macht):

Mais il faut que tout se soumette et se ploie à votre gré. C'est ce qu'exige votre vouloir ; que tout s'assouplisse et se soumette à l'esprit, que tout se réduise à en être le miroir et le reflet. C'est là tout ce que vous voulez, sages insignes, et c'est un désir de puissance, même quand vous avez à la bouche les mots de bien et de mal et de jugements de valeur. Vous voulez d'abord créer un monde tel que vous puissiez l'adorer à genoux ; c'est votre dernier espoir, votre suprême ivresse.

To Nietzsche, God is the most powerful expression of men’s will to gain power: “Dans la mesure où tout ce qui est grand et fort a été conçu par l'homme comme surhumain, comme étranger, l'homme s'est rapetissé — il a dissocié ces deux faces, l'une très pitoyable et faible, l'autre très forte et étonnante, en deux sphères

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distinctes, il a appelé la première “homme”, la seconde “Dieu”.\textsuperscript{257} Humanity’s weak side is due to its animalism. The contempt and disgust that humans express towards their animalism encourages them to conceive the \textit{übermensch}. This will to gain power also encourages men to dominate their nature by defining a morality: “Le sur-animal.

La bête qui est en nous ne veut pas être trompée ; la morale est ce mensonge de secours qui nous permet de n'être pas déchirés. Sans les erreurs que comportent les hypothèses de la morale, l'homme serait resté animal. Mais de la sorte, il s'est pris pour quelque chose de supérieur et s'est imposé des lois plus sévères.”\textsuperscript{258}

However, Marinetti’s multiplied man differs from Nietzsche’s \textit{übermensch} in the sense that it is oriented towards the future. Marinetti criticizes Nietzsche’s concept as a remnant of Greek Tragedy. It is speed that enabled Marinetti to conceive of the idea of a multiplied man, to be rendered possible by technology in a near future. However, can we consider the advent of the perfect man in the future as new? Can the “perfect man” that Marinetti and Vertov announced simply be a creation of twentieth-century technology?

3.4. Millenarianism

Whether utopias are represented in the past or in the future, I argue that both conceptions are religious in the sense that millenarianism already represented happiness in the future. Millenarianism is indeed a religious but also a political belief in the approaching transformation of society. It is found in many religions and cultures. According to Christian eschatology, it takes the form of a kingdom of God on Earth that will last a thousand years. Interestingly, according to historian of science Stephen Jay Gould in his essay \textit{Questioning the Millennium} (1997), there has been a

\textsuperscript{257} Nietzsche, op.cit., p.172

\textsuperscript{258} Nietzsche, op.cit. p.195
resurgence of millenarian conceptions beginning precisely at the end of the nineteenth century, in movements such as Mormonism, Jehovah witnesses or Rastafari. One can imagine that technological utopianism had something to do with this revival. Historian of science Jean-Paul Deléage even considers utopias in general to be secular forms of millenarianism.259

In this sense, I will argue that Futurism is a secular form of millenarianism. In his essay L’utopie ou la Crise de l’Imaginaire (1973), philosopher Jean-Jacques Wunenburger suggests that utopias are influenced by millenarianism: “Aussi l’utopie doit être enrichie dans sa compréhension de tout l’héritage de la pensée eschatologique et millénariste, qui a fourni les cadres temporels au renversement du mythe du paradis perdu.”260 In Le Dictionnaire des Utopies, Michèle Riot-Sarcey devotes an article to millenarianism and mentions the existence of secular versions such as Marxism.261 Philosopher Raymond Aron argues as well that Communism and Nazism are secular forms of millenarianism.262 Given this proposition, one might, then, consider nineteenth-century uchronias and techno-utopias as secular versions of millenarianism.

I will argue, therefore, that Marinetti’s desire to get rid of religion and to create “a moral religion of speed” implies a religious relationship to technology and to the future. As I have shown, utopias had often been represented as Gardens of Eden in the past, which included ancient myths such as the Golden Age. Then utopias were set on Eden-like islands from the sixteenth through the eighteenth centuries with novels

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260 Wunenburger, op.cit., p.78
such as *Paul et Virginie* (1787), and finally, they took place in the future starting in the nineteenth century. Utopias were thus taking place either in an ideal past before the Fall or in a futuristic setting.

**Conclusion**

Despite this millenarian conception of time, Marinetti introduced a notion that profoundly changed twentieth-century art and culture as a whole: simultaneity. Postmodernity is often defined by its inscription in the present while modernity was oriented towards the future and pre-modernity towards the past. The notion of simultaneity will impact art and culture long after Futurism. I would even argue that Marinetti foresaw the communication utopias of the last decades of the twentieth century. Marinetti first anticipated many times the artistic use of the television medium. For example, he developed the concept of “a Futurist theater of the skies enhanced by radio and television.” He imagined “screens for television [...] hung from special airplanes.” In the manifesto *The Radio* (1933), written together with Italian poet Pino Masnata, Marinetti envisions the creation of a “television at a resolution of 50,000 dots for every large image on a big screen.” Art historian Clarisse Bardiot reflected on the role of this manifesto in media history: “This manifesto is to be considered a precursor of our contemporary reflection on the Internet and the works of art that are linked to information and communication technologies and is thus mentioned regularly in studies on the history of new media, of telepresence and Net-Art.”

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264 Marinetti, *Critical Writings*, op.cit.,p. 408
265 Marinetti, *Critical Writings*, op.cit.,p. 411
Indeed, Marinetti’s discourse was not very different from that of Marshall McLuhan and Pierre Theilard de Chardin, considered by the promoters of the Internet as the founding fathers of what Flichy calls the *Internet Imaginaire*. Engineers and hackers who participated to the development of the Internet, and scholars alike inherited Marinetti’s idea of a global village. Half a century before McLuhan’s theories of the “global village,” Futurists had imagined a “world village,” based on the speed of new technology.

To Marinetti, speed was leading humans to a worldwide revolution. In his 1913 manifesto *Words in Freedom*, Marinetti described technology not only as a new aesthetic and a new religion but also as a global techno-utopia that would connect everyone on earth: “The earth shrunk by speed. New sense of the world. To be precise: one after the other, man gained the sense of his home, of the districts where he lived, of his region, and finally of his continent. Today, he is aware of the whole world. He hardly needs to know what his ancestors did, but he has a constant need to know what his contemporaries are doing all over the world.”

In the *Technical Manifesto of Futurist Literature*, Marinetti goes so far as to proclaim the creation of a “wireless imagination.” Such an expression has a particular resonance for a contemporary audience. Indeed, Marinetti anticipated the crucial role that wireless technology would play not only in communications but also in twentieth-century culture in general. According to John J. White, telegraphy is the most influential of all the technologies mentioned in his works: “Marinetti singles out

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the invention of the wireless telegraphy as one of the great milestones in civilization’s progress towards the futurist electric millennium of the twenty-first century.”

CHAPTER 4: FROM UTOPIAN SPACES TO VIRTUAL WORLDS

“The computer thus holds out the promise of a technologically engendered state of universal understanding and unity, a state of absorption in the logos that could knit mankind into one family and create a perpetuity of collective harmony and peace.”

Introduction

In 2010, the magazine Wired—a periodical managed since the 1990’s by the pioneers of the World Wide Web—nominated the Internet for a Nobel Peace Prize, arguing that it improved dialogue between nations. As expressed by media theorist Marshall McLuhan, computers and later the network of networks became a synonym of worldwide peace, a universal utopia. Recalling the utopian dimension of the Internet seems all the more necessary a few decades after its creation, while anti-technology discourses against Internet corporations such as Google and Facebook are blossoming due to their use of our personal data. We are trying to find ways to disconnect and cure our addiction to technology, while the fear of cyber attacks has cast a shadow over our image of a peaceful network.

However, as demonstrated previously in this work, we once dreamed about the technology we are now condemning. In this chapter, I will demonstrate that we constructed a techno-utopia from the 1960’s until the early 2000’s, an era also known as the Computer Revolution. This utopia was based on the belief that computers and later the Internet would help humans connect and communicate better, which would lead to global peace and community spirit.

In *The Internet Imaginaire* (2001), sociologist Patrice Flichy traces the emergence of the social values that shaped what would become the Internet, from the creation of Arpanet in 1969 until the end of the 1990’s. He shows how this *imaginaire* was first defined between 1969 and 1989 by several communities: engineers, academics and hackers who were part of the hippie counterculture. This *imaginaire* was then expressed by artists, journalists, and writers. His analysis is based on articles published in the 1990’s in *Wired* magazine—a periodical founded in San Francisco in 1993—by what he calls “the gurus of the Web.” Flichy also refers to articles published from 1991 to 1995 in three main American news magazines: *Time, Newsweek* and *Business Week*.

The founding fathers of the Web believed they were part of a cultural, educational, social and political revolution. The recurrence of the term “revolution” in their discourse contributed to the techno-utopia. In 1985, one of the senior writers of *Wired*, Steven Levy, wrote a book entitled *Hackers: Heroes of the Computer Revolution*.

Alvin Toffler, the most renowned American futurologist, considers the era of the computer to be “the third wave” of civilization. In 1980, he published a book entitled *The Third Wave*, in which he claimed that the agricultural and industrial civilizations had been replaced by an information era. To him, it was not just a computer age but also a wave encompassing all aspects of society. This theory could easily be compared to Auguste Comte’s Law of Three Stages—theological, metaphysical and positive. In that sense, the advent of the Computer Revolution resembles the Industrial Revolution. Toffler’s discourse shares the utopian and prophetic dimension of nineteenth-century descriptions of the miracles of technology.
The values of the techno-utopia are the same: a sense of community, peace, democracy, etc. In this chapter, my demonstration will be threefold.

First, drawing on Flichy’s seminal work, I will focus on the social values I consider as central in the history of the Web (community, unity, democracy, etc.) and will interpret them as part of a larger definition of utopias. Indeed, I will adopt a literary perspective, providing textual analysis for the discourses of those players in the Computer Revolution (Steven Levy, Howard Rheingold, and Alvin Toffler, among others). Furthermore, I will put this discourse within the framework of literary history, from the ancient myth of the Golden Age to contemporary science fiction authors.

Interestingly, Flichy makes one allusion to traditional utopias in his essay but affirms that the purpose of his work is not to define and analyze literary utopias:

Although all these components of the cyber imaginaire were never combined in a single discourse, a synthesis would reveal something similar to the great utopias of the seventeenth and eighteenth century in which the functioning of a different world was described. Of course, such a synthetic account would have little meaning, for whereas traditional utopias are literary works with a single author, the cyber-imaginaire examined here corresponds to the representations of a whole section of U.S society today.  

Flichy is aware of the common traits of the cyber imaginaire and more ancient utopias but, as a sociologist and professor of communication, decides to simply allude to literature. But, contrary to Flichy, I will focus on this aspect and argue that literary utopias, while written by different authors, usually share the same universal

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components, despite being written at different times and places. Utopian spaces always reflect humans’ search for happiness and represent different ways to achieve it. They often share the same traits: peace, community spirit, common property, equality, etc. I will thus transform Flichy’s allusion to literature in order to underline the crucial role of literary analysis in Internet studies. For instance, we will see that the words “android” and “cyberspace” were created not by engineers or scholars but by novelists: Auguste Villiers de l’Isle Adam in *L’Eve Future* (1886) and William Gibson in *Neuromancer* (1984). Despite its frequent use in our contemporary culture, the word “virtual” is also older than we imagine.

Second, I will try to define the concept of virtual reality. Contrary to utopias, virtual spaces are not necessarily disconnected from reality. Therefore, techno-utopias of the computer age raise the question of the tension between the real and the artificial in virtual worlds. Therefore, we will try to define the transition between utopian spaces and virtual worlds based on theorists such as Patrice Flichy, Jean Baudrillard and Donna Haraway, among others.

Third, I will show that the imaginaire that appeared in the 1960’s has existed since the end of the nineteenth century. To support this argument, I will draw a parallel between the themes in the movie *Her* by Spike Jonze (2013) and *L’Eve Future* by Villiers (1886). In *Her*, the director sets the story in a city of the future. The main character is Theodore, a man disappointed by the woman he loved and in the midst of a divorce, who suffers from loneliness. His job consists in writing fake love letters for people who pay company for that purpose: beautifulletters.com. His vision of love is altered by the artificial dimension of real relationships. However, he develops a more real and meaningful relationship with Samantha, the operating system of his computer, whose image he can’t see because she does not have a body. Her voice,
however, is so soothing and sensual that he falls in love with her and starts a relationship. As in *L’Eve Future*, the virtual love between the man and the machine-woman is more fulfilling than the actual human interaction.

This motif was common in the literature of the nineteenth century since, as I will claim, virtual spaces appeared in nineteenth-century literature. For instance, Jules Verne portrays a similar woman, La Stilla in *Le Château des Carpathes* (1899) in which a scientist recreates the voice of a dead female opera singer thanks to the phonograph, in order that the man who loves her may keep hearing her. With the phonograph, the camera and the telephone, one can capture the voice and body of a real human being who can appear virtually.

1 From Utopian Spaces to Virtual Worlds: the Birth of the Internet

In this section, we will analyze the utopian dimension of the discourses that blossomed around the development of the Internet.

1.1 The Internet Imaginaire

We will start by examining the traditional utopian values found in the discourse of the founding fathers of the Internet: collective happiness, unity, perfection, community spirit, equality and peace. As explained in the introduction, the founders of the Web were scholars of computer science and hackers influenced by the hippie counterculture. They created Arpanet (the ARPA\textsuperscript{272} network) in 1969, Usenet in 1979 (the Usenix network), Csnet (computer science network) in 1982, Nsnet (National Science Foundation network), Internet in 1983 and the World Wide Web in 1990.

\textsuperscript{272} The ARPA (Advanced Research Project Agency) was the Defense Ministry research agency
1.1.1 Happiness and Unity

Textual analysis of the discourses that surround the creation and reflection on virtual spaces can enable us to identify the many striking common traits between virtual and utopian spaces. Like utopian spaces, virtual communities were first conceived as a source of happiness for users, as expressed by Licklider and Taylor, the computer scientists that founded the Arpanet—ancestor of the Web:

In a few years...men will be able to communicate more effectively through a machine than face-to-face. [...] There will be communities not of common location but of common interest. [...] First, life will be happier for the online individual because the people with whom one interacts more strongly will be selected more by commonality of interests and goals than by accidents of proximity. Second, communication will be more effective and productive, and therefore more enjoyable. 273

The happiness and pleasure mentioned above derives from the creation of communities of interest. The notions of alterity and difference disappear, to be replaced by a sense of unity, as is the case in any utopia. The point I want to underline is that the ideal community is perfect, harmonious, and peaceful because otherness does not exist. For instance, in the medieval utopia of Cockaigne, social classes do not exist. In Zola’s *Travail*, the members of the ideal city become one unique, classless, and harmonious community thanks to marriages between members of the former social classes.

It is what French historian Raoul Girardet calls the “myth of unity” in his essay *Mythes et Mythologies Politiques* (1986), in which he analyzes the role of *l’imaginaire* in the history of ideologies. These myths appear during historical periods in which there is a crisis due to societal changes that give a feeling of disenchantment and violence. He gives the example of the French Revolution, a period during which the myth of unity was particularly significant and illustrated by numerous celebrations and nearly religious ceremonies on the unity of the French nation. According to Girardet, the myth of the unity can be explained by modernity and the rise of individualism. Drawing on Girardet’s point, I would argue that the Industrial Revolution as well as the Computer Revolution correspond to an important crisis that could explain the revival of this myth.

1.1.2 Perfection

The Internet was conceived as an ideal and perfect space by many of its founders. As explained in his book *Literary Machines* (1981), American sociologist Ted Nelson—pioneer of the Web and inventor of the concept of hypertext in 1965—created the Xanadu Project, the ancestor of the HTTP protocol. He named his project “Xanadu” in honor of the poem "Kubla Khan or a Vision in a Dream" (1816) by British author Samuel Taylor Coleridge. In the poem, Xanadu is an ideal place that the poet locates in China:

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In Xanadu did Kubla Khan
A stately pleasure-dome decree:
Where Alph, the sacred river, ran
Through caverns measureless to man
Down to a sunless sea.
So twice five miles of fertile ground
With walls and towers were girdled round:
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With walls and towers were girdled round:
And there were gardens bright with sinuous rills,
Where blossomed many an incense-bearing tree;
And here were forests ancient as the hills,
Enfolding sunny spots of greenery. […]
A savage place! As holy and enchanted
As e'er beneath a waning moon was haunted
By woman wailing for her demon-lover!
[…]
And close your eyes with holy dread,
For he on honey-dew hath fed
And drunk the milk of Paradise. 274

The poet’s description contains many aspects of a utopia: it is perfect, sacred, and secluded; there is a garden in which the vegetation is luxurious and the soil is rich; it is surrounded by walls; the palace is located in Asia and thus exotic. As mentioned in the previous chapters, all these traits are commonly found in literary utopias. Indeed, utopian spaces are often isolated, surrounded by walls or mountains. In *Candide* by Voltaire (1759), Eldorado is almost inaccessible:

Il est impossible de remonter la rivière rapide sur laquelle vous êtes arrivés par miracle, et qui court sous des voûtes de rochers. Les montagnes qui entourent tout mon royaume ont dix mille pieds de hauteur, et sont droites comme des murailles ; elles occupent chacune en largeur un espace de plus de dix lieues ; on ne peut en descendre que par des précipices. 275

1.1.3 Community Spirit

The community spirit, which involves a sense of unity and solidarity, is without a doubt the most fundamental value in the conception of cyberspace. In traditional utopias, the motif of the family is recurrent. In *Travail*, La Crécherie is often considered a family by its founder, Luc: “Nous ne sommes qu’une association, une famille ouverte à tous les frères désireux de se joindre à nous” (Zola, 469). The metaphor is even more extreme in *Paul et Virginie* (1787) by Bernardin de Saint Pierre, in which the utopian community is a family composed of the two main eponymous characters, two children raised together as brothers and sisters by two single mothers. The two women are described as sisters and the children as brother and sister.

In virtual worlds, the most important value is community. Howard Rheingold, influential actor of the Computer Revolution, explains this phenomenon by the disappearance of traditional ways of socializing in *The Virtual Community* (1993), an essay in which he describes his experience with an early online network system called “WELL” (Whole Earth 'Lectronic Link):

I suspect that one of the explanations for this phenomenon is the hunger for community that grows in the breasts of people around the world as more and more informal public spaces disappear from our real lives. I also suspect that these new media attract colonies of enthusiasts because CMC [*computer-mediated communication*] enables people to do things with each other in new
ways, and to do altogether new kinds of things--just as telegraphs, telephones, and televisions did.\textsuperscript{276}

The reference to telegraphs, telephones and televisions is particularly relevant for our purposes. Since the end of the nineteenth-century, communication networks have not replaced but coexisted with real-life interactions. Paradoxically, new means of transportation and communication have made humans more mobile and contributed to the alteration of family and community relationships. People travel more and leave their traditional communities, leading them to communicate differently, lose their sense of a traditional community and strive for the creation of new ones.

The futurologist Alvin Toffler defined the need for community as one of the main pillars of the new informational stage of civilization in his book \textit{The Third Wave} (1980): “To create a fulfilling emotional life and a sane psychosphere for the emerging civilization of tomorrow, we must recognize three basic individual requirements: needs for community, structure, and meaning.”\textsuperscript{277} To him, the computers will help create what he calls a “telecommunity”:

The popular fear that computers and telecommunications will deprive us of face-to-face contact and make human relations more vicarious is naive and simplistic. In fact, the reverse might very well be the case. While some office or factory relationships might be attenuated, bonds in the home and the community could well be strengthened by these new technologies. Computers and communications can help us create community.\textsuperscript{278}

\textsuperscript{277} Toffler, \textit{op.cit.}, p.367
\textsuperscript{278} Toffler, \textit{op.cit.}, p.372
The related notion of conviviality was also popularized by engineers such as Ivan Illich, author of *Tools for Conviviality* (1973). This book inspired Lee Felsenstein, a San Francisco hacker, who created in 1973 a project called “Community Memory,” an experimental network with two terminals connected to each other and set up in public places such as record shops or public libraries. It was described as “convivial and participatory.”

The community spirit was reinforced by the hippie subculture that founded the online group mentioned above, the WELL, a virtual community launched in 1985 by Stewart Brand and Larry Brilliant, two writers and members of the hippie counterculture. The WELL was often compared to a hippie community by one of its founders, Kevin Kelly: “The [WELL] has become a way to live in a commune without having to live on one.”

1.1.4 Peace

The notion of peace is omnipresent in the hippie counterculture that influenced the numerous hackers who founded the Internet, such as writer Richard Brautigan, author of the poem “Loving Grace Cybernetics”:

I like to think (and the sooner the better!) of a cybernetic meadow where mammals and computers live together in mutually programming harmony

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280 Kelly qtd. in Flichy, *op.cit.*., p. 73
like pure water
touching clear sky.

I like to think
(right now, please!)
of a cybernetic forest
filled with pines and electronics
where deer stroll peacefully
past computers
as if they were flowers
with spinning blossoms.

I like to think
(it has to be!)
of a cybernetic ecology
where we are free of our labors
and joined back to nature,
returned to our mammal
brothers and sisters,
and all watched over
by machines of loving grace. 281

Despite the certain naivety of the poem and its inscription in the hippie movement, the
text expressed several values of the techno-utopias mentioned in this dissertation: the
motif of the garden, the near future (reinforced by the “right now please!”), the end of
labor, the peace, the fraternity, and the comparison of machines to gods.

Community spirit as a central value of the Internet was at the heart of the
discourses around the millennium, as expressed by Canadian sociologist Pierre Levy

281 Brautigan, Richard. All Watched Over by Machines of Loving Grace. Augusta, GA: Communication
Company, 1967.p.5
in an interview for *Le Magazine Littéraire* in 2000: “La grande utopie, l’utopie par excellence: c’est l’unité de l’humanité. C’est l’humanité qui se rencontre elle-même et qui arrête de se faire la guerre. C’est la fin des frontières. Or cette utopie est désormais à notre portée, elle est à portée de main, c’est-à-dire à portée d’ordinateur.” 282 Levy’s quote summarizes the cyber-utopia: the computer will bring unity and peace in a world without borders.

1.1.5 Democracy

In traditional utopias, the harmony of the community is often guaranteed by a political system that establishes equality between the members of the community. As we have seen in chapter 1, techno-utopias are based on the belief in technology as a political solution. In *Travail*, Zola describes machines as the liberators of factory workers, tools that would make their lives easier and give them access to leisure, erasing social differences in the fictional city of Beauclair. This idea was expressed in the discourse surrounding the creation and diffusion of the Internet.

Politicians were involved in the promotion of the new media in the United States. According to Flichy, the political justification of state funding in the development of the Internet was comparable to that of the New Deal 283. Already in the 1980’s democratic senator Al Gore considered fiber optics as a revolution: “It will change the way we view our world, just as the Copernican Revolution did.” 284 In 1991-1992, politicians decided to support the development of high-speed networks in the United States to convert the military research after the Cold War as well as to support American innovations in academic research. In 1991, Al Gore initiated the

283 Flichy, *op.cit.*, p. 22
284 Gore qtd. in Flichy, *op.cit.*, p.20.
creation of the High Performance Computing Act, a law designed to support and promote the use of networks in academic research. Al Gore’s ultimate goal was to give access to all citizens: “[…] provide American researchers and educators with the computer and information resources they need, and demonstrate how advanced computers, high-capacity and high-speed networks, and electronic databases can improve the national information of all Americans.”

As mentioned in chapter 3, the discourse on “information highways” was abundant in academia, think tanks, politics and economy during the 1992 Clinton/Gore campaign. To Al Gore, these highways were able to reinforce democracy:

In a sense, the information highways will be a metaphor for democracy itself…

The information highways will not only be a metaphor for a functioning democracy but greatly enhancing the participation of citizens in decision making. And it will greatly promote the ability of nations to cooperate with each other. I see a new Athenian age of democracy forged in the fora the information highways will create.

The references to the Copernican Revolution or Athenian democracy refer to a Golden Age of democracy. What is interesting in this quote for my purposes is that politicians themselves shared the vision that the gurus of the Web had of the new network: a technology that would enhance citizen participation and foster democratic expression through a media rather than through political institutions. To them, democracy happens also through the media, which was confirmed by social networks a few decades later.

285 Gore qtd. in Flichy, op.cit., p.19
286 Gore qtd. in Flichy, op.cit., p.31. see also chapter 3.
If Internet guarantees democratic expression, isn’t the media a political solution? Isn’t the end of politics as feasible as described in Zola’s novel? Indeed, cyber-democracy is based on the idea that the Internet would provide a space for democratic expression. One of the first promoters of the Internet as a techno-utopia and the author of the first article on virtual communities in 1987, Howard Rheingold claimed that: “the political significance of computer mediated communication lies in its capacity to challenge the existing political hierarchy’s monopoly on powerful communications media, and perhaps revitalize citizen-based democracy.”

Futurologist Alvin Toffler also advocates the same grassroots democracy in his ideal vision of the future, the advent of his *Third Wave*: "The increasing differentiation of society will also mean a reduced role for the nation-state." Flichy even interprets this phenomenon as “the end of politics” in the *Internet Imaginaire*.

The end of politics is related to the new relationship to time that developed as a result of machines. Indeed, expressing an opinion in a virtual community is faster and does not require the same process as it would in a standard political community (writing a speech or a tract, campaigning, voting, etc.). Toffler often refers to the speed of contemporary society in *The Third Wave* but also in an interview with Kevin Kelly, published in *Wired*: “We should attempt to devise new forms of democratic practice that can handle the levels of complexity and speed our society requires. I think we’re about to see an overall change in the politics of the country, during which the digital community will become much more conscious of its own political role.”

289 Flichy, *op.cit.*, p.155
290 See chapter 3
291 Toffler qtd. in Flichy, p.42
During the presidential campaign of 1996, *Wired* magazine coined the term “netcitizen” and created a section under that heading.

In the early 2000’s, the second version of the Internet, the Web 2.0, was defined as a version based on users’ participation and user-generated content, as opposed to the first version, which only involved the simple viewing of webpages.\(^{292}\) The web 2.0 is defined by the use of social networks, wikis, blogs, video sharing sites, etc. For instance, Wikipedia was created in 2001. It was also the beginning of “citizen (or participatory) journalism”: journalists and non-journalists writing side by side on the same websites and users posting comments, pictures, and contributing to the news coverage.

Having exposed some of the values surrounding the creation of the Internet, I will show in the following section how the metaphors employed by its founders to describe the Web have common traits with traditional utopias.

1.2 Waves and Webs: the Travel Metaphors of the Internet

Recently, Internet metaphors have been used to serve the interest of corporations or politicians, as revealed by Wyatt’s article on Internet vocabulary: “For instance, those who use metaphors of consumption and shopping malls will devote resources to developing secure exchange mechanisms. Computer security experts

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\(^{292}\) The term was coined by Darcy DiNucci in her 1999 article “Fragmented Future.” *Print* 32 (1999): 221.
deploy metaphors that invoke fear, anxiety, and apocalyptic threat. For instance, these experts talk about “viruses.”

However, when analyzing the vocabulary employed earlier by the founders of the Internet, a vocabulary now used by all, one can easily claim that these words have a lot in common with the traditional utopian imaginaire. As electricity was compared to a fairy, the Internet is compared to a web. According to linguistic scholar Denis Jamet, these metaphors help to overcome the invisibility of some technological phenomena. “Information superhighways,” “webs,” “clouds,” “matrices,” “frontiers” and “cyberspace” are thus terms used to describe the Internet.

The notion of voyage seems to encompass many words encountered with regards to the web, as contemporary techno-utopias were still a journey to an unknown island, as could be the case in traditional utopias. Indeed, one can navigate or surf the Internet, stream data and write on a blog—a contraction of web and log, which is the travel journal recorded by sailors. The “cyber” in “cyberspace” comes from the Greek for the steersman of a boat).

The metaphors of voyage are often analyzed by anthropologists and mythologists as representing humans’ pursuit of happiness, which is the purpose of any utopia:

Le voyage illustre le chemin par lequel on doit passer pour acquérir la connaissance ou une dimension spirituelle supérieure. Ce peut être les pérégrinations d’une âme après la mort, ou celles du héros aux Enfers. Le voyage de l’âme exprime la recherche de la félicité, de la vérité et de


l’immortalité. Le déplacement physique représente la conquête d’un nouveau territoire. ²⁹⁵

Internet was indeed a territory to conquer. In 1994, *Net Guide* published an article describing the uses of the Internet: “You’ll be part of an active, expanding community of people exploring…the information frontier.”²⁹⁶ The fact that the Internet emerged in the United States might explain the references to conquest expressed here by the words “frontier” and “exploring.” The latter can also be found in the name of Microsoft’s famous browser: Internet *Explorer*.

This confirms Mircea Eliade’s claim that the conquest of America had a utopian dimension. So does the exploration of cyberspace. The *Net Guide*’s article goes so far as to claim that the Internet is not like a new world but that it is a new world: “You can lose yourself in a new medium and a new world.”²⁹⁷

I consider this lexical field as an inheritance of traditional utopias which were often centered on voyage, as confirmed by Christophe Cave in the *Dictionnaire des Utopies*: “L’utopie littéraire s’est en grande partie construite dans sa relation avec le récit de voyage […] C’est dans le prolongement des grandes découvertes du XVIème siècle et des récits de voyage qu’apparaît le voyage en utopie.”²⁹⁸ Indeed, the tradition of literary peregrinations goes back to *The Odyssey*, which is considered utopian by many scholars²⁹⁹. However, the Renaissance marked the real beginning of utopian travel narratives. In More’s novel, the description of the ideal island in book 2 is prepared by Raphaël Hythloday’s different journeys in book 1, journeys that were part

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²⁹⁶ Wolf qtd. in Flichy, *op.cit.*, p.96
of Amerigo Vespucci’s expeditions. The voyage then becomes the utopia itself with Gabriel de Foigny’s La Terre Australe Connue (1676), which, according to literary scholar Jean-Michel Racault, inaugurates a new utopian tradition linked with travel narratives through novels such as Denis Vairasse’s Histoire des Sévarambes (1677), Gullivers’ Travels (1726) by Jonathan Swift, La Découverte Australe par un Homme Volant by Rétif de la Bretonne (1781), Icosaméron by Giacomo Casanova (1787), and Voyage en Icarie by Etienne Cabet (1840). The narrator of Veirasse’s utopia expresses his interest in these narratives: “Je prenais un plaisir incroyable aux livres de voyage, aux relations des pays étrangers, et à tout ce qu’on disait des nouvelles découvertes.”

Diderot’s utopia is also a complement of Bougainville’s missions. Jacques Sadeur, Gabriel de Foigny’s hero in La Terre Australe connue (1776), is compared to Magellan and Marco Polo. Whether they are real or fictional, the remote islands or territories represent what philosopher Raymond Ruyer calls “les possibles latéraux” of utopias in his essay L’Utopie et les Utopies (1950).

Although cyberspace shares common traits with utopias, it has also profoundly changed our conception of imaginary spaces and needs to be defined.

2 What is a Virtual Space?

2.1 The Contemporary Definitions

From “virtual reality” to “virtual life,” the word “virtual” is so ingrained in our contemporary vocabulary that we tend to forget its utopian dimension and mistakenly integrate it into our material life, due in part to its association with the digital world. Very often, we confuse virtual with digital.

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Contrary to utopias, virtual spaces are not necessarily disconnected from reality. Despite the fact that the use of artifice or *techne* by humans has always existed, the conception of reality has changed. Under the influence of modern thinkers such as Descartes and Galileo, scientific theories have explained reality in opposition to our senses and our experience of nature. For instance, it is not because the earth *feels* flat that it is. With modernity, the word “reality” has acquired a negative connotation and has been increasingly difficult to define. Reality has been dematerialized and thus has become immaterial, defined by abstract and scientific norms. The idea expressed by Plato through the Allegory of the Cave that our senses could create illusions has been reinforced by modern science. The artificial defines the real and thus becomes superior.

The word “virtual” does have a connection to reality. The virtual resembles Bloch’s “Not Yet Conscious,” as confirmed by Anne Cauquelin who analyzes the etymology and origins of the term “virtual” in her article “Mots et Mythes du Virtuel”: “Le terme "virtuel" sonne dans les esprits comme un écho ancien : il désigne, couramment et par référence à la théorie antique (quelque peu édulcorée et transformée, il est vrai) la potentialité non encore éveillée, attendant la réalisation, qui qualifie un état.”

The word “virtual” is defined by Canadian philosopher Pierre Levy as “le réel avant qu'il ne passe à l'acte” in his book *Qu’est-ce que le Virtuel ?* (1995). It comes from the Latin *virtus*, which means “power”: “Dans la philosophie scolastique, est virtuel ce qui existe en puissance et non en acte. En toute rigueur philosophique, le virtuel ne s’oppose pas au réel mais à l’actuel : virtualité et actualité sont simplement

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deux manières d’être différentes.” This conception is shared by Gilles Deleuze and Claire Parnet who claim, in *Dialogues* (1977), that the virtual is not opposed to reality but to action. Thus, the expression “virtual reality” is not an oxymoron.

One might say that the expression “virtual reality” is related to *realism*. As confirmed by Patrice Flichy, hackers see virtual reality as a way to reconstruct the real. Nicholas Negroponte, co-founder of *Wired* in 1992 and researcher at the MIT, is one of these hackers: Basically, virtual reality makes the artificial as realistic as the real. In flight simulation, its most sophisticated and long-standing application, virtual reality is even more realistic than the real. Pilots are able to take the controls of fully loaded passenger planes for their first flight because they have learned more in the simulator than they could in a real plane.  

However, the definition varies from one community to another, from one individual to another: “Virtual reality is a particularly interesting case of the multiplicity of *imaginaires*.” For scientists, it is a pure reconstitution of reality. For hackers, it is a means for withdrawing into oneself and escaping into an imaginary world or a means of communication. Artists see it as a way of creating new worlds.

In this essay, I will be concerned with virtual worlds or virtual communities rather than virtual realities. Indeed, I will focus on the artists’ vision of technology: the use of machines as ways to construct new worlds through films, novels, video games, etc. These virtual worlds can be defined as computer-based, simulated environments populated by users who can create a personal avatar, participate in its

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303 Negroponte qtd in Flichy, *op.cit.*, p.133
304 Flichy, *op.cit.*, p.129
activities and communicate with others. Numerous video games, software programs, science fiction films and novels represent virtual worlds. Jonze’s film *Her* is a particularly relevant example of a virtual world.

### 2.2 Espaces Autres

In my view, virtual worlds are heterotopias or what Foucault calls “espaces autres.” They are spaces out of time and space, such as boats or theatres. Interestingly, the expression “virtual reality” was first employed by Antonin Artaud in reference to theatres in *Le Théâtre et son Double* (1938), in which he describes the stage as a virtual space. Brenda Laurel, in her essay *Computers as Theatre* (1992), also compares virtual reality to theatre: software designers think about users more than machines the same way that playwrights think about the audience while writing.

The notion of virtual reality was developed with the creation of the Internet and popularized by Ted Nelson, inventor of the hypertext in 1965, who compares it to cinema: “An interactive computer system is a series of presentations intended to affect the mind in a certain way, like a movie…The reality of an interactive system includes its data structure and what language it’s programmed in— but again who cares? The important concern is, *what does it seem to be?* 

According to Pierre Levy in *Qu’est-ce que le Virtuel?*, there is a process of virtualization of society, a multiplication of these “espaces autres”:

*Jamais, sans doute, le changement des techniques, de l’économie et des mœurs n’ont été si rapides et déstabilisants. Or la virtualisation constitue justement l’essence, ou la fine pointe, de la mutation en cours. En tant que telle, la*

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virtualisation n’est ni bonne, ni mauvaise, ni neutre. Elle se présente comme le mouvement même du devenir autre-ou hétérogène-de l’humain.  

In virtual spaces, we leave the here and now to penetrate a new time-space nexus.

In a virtual space, we are also out of space, or nowhere, as in a utopia (which etymologically means “no place”), as explained by Pierre Levy:

Une communauté virtuelle […] vit sans lieu de référence stable: partout où se trouve ses membres mobiles…et nulle part. La virtualisation réinvente une culture nomade, non par un retour au paléolithique ni aux antiques civilisations de pasteurs, mais en faisant surgir un milieu d’interactions sociales ou les relations se reconfigurent avec un minimum d’inertie.

As we will see later in this chapter, the nomadism mentioned by Levy is illustrated by the numerous travel metaphors found in Internet language.

One of the other differences between a virtual space and a utopian or heterotopian space is that individuals can interact with the technology. The senses of the users are mobilized. According to Brenda Laurel, virtual reality does only enable users to escape but they can actually be immersed in another world: “immersion is not just physical and perceptual; it is also cognitive and emotional.”

2.3 Cyberspace in Gibson’s Science-fiction Novel Neuromancer

The term “cyberspace” also expresses the creation of these “espaces autres.”

The term wasn’t coined by computer scientists or hackers but by a science fiction author, William Gibson, in his novel Neuromancer (1984):

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307 Levy, op.cit. p.13
308 Levy, op.cit., p.14
Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts... A graphic representation of data abstracted from banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the non-space of the mind, clusters and constellations of data.  

The expression “consensual hallucination” exemplifies the two dimensions of cyberspace: on the one hand, it is realistic and created by men but, on the other hand, it is the illusion of reality. As a utopia, it is a distorted mirror. According to Gibson, cyberspace is a non-space, which corresponds with the etymological sense of the word utopia.

To illustrate the double dimension of cyberspace as a realistic utopia, Alvin Toffler—a well-known futurologist who took part in the conceptualization of virtual spaces in the 1970’s and 1980’s—coined the term “practopia”: “Unlike a utopia, a practopia is not free of disease...It is not static or frozen in unreal perfection. Nor is it not reversionary, modeling itself on some imagined ideal of the past...In short, a practopia offers a positive, even a revolutionary alternative, yet lies within the range of the realistically attainable.”

The definitions of cyberspace mentioned above are based on contemporary works by communication scholars. We will see that nineteenth-century novels can help us understand the process of virtualization that emerged during the Fin de Siècle, which can shed light on contemporary representations of virtual worlds in science fiction novels, films and video games.

311 Toffler qtd. in Flichy,op.cit.,p. 118
2.4 Analyzing the Origins of Virtual Spaces

2.4.1 Virtual Voices: The Phonograph and the Telephone

As other machines mentioned in this study, Hadaly — the machine woman of *L’Eve Future*— and Samantha— the female voice of the computer in *Her*— are both goddesses who take part in the cult of technology. Hadaly is often compared to a goddess or an angel. More precisely, she is considered to be the incarnation of Venus, the goddess of love. She is also the Eve of the Bible or what Villiers calls “une Eve scientifique” (Villiers, 267).

However, I would argue that what makes the two characters goddesses is, above all, the role of their voice. With the creation of Siri’s voice by Apple in 2011, we have tended to imagine that this phenomenon was recent. However, the fantasy of giving voices to machines has existed for a long time. In *L’Eve Future*, the voice of all the women— real or artificial— play a crucial part. They illustrate the magical dimension attributed to the phonograph and the telephone when they were invented at the end of the nineteenth century, as expressed by philosopher Gilbert Simondon in *Du Mode D’Existence des Objets Techniques* (1958): “N'oublions pas que le téléphone a souvent été, dans les années 1870 et 1880, perçu comme un instrument magique!”

People believed they could hear voices of spirits, ghosts, fairies or gods.

The female characters in Villiers’ novel speak like goddesses. Alicia has a “voix divine” (100). Hadaly pronounces “celestial” (216) words that are recorded on golden phonographs. However, real women such as Alicia are disappointing only when they speak. Indeed, Lord Ewald loves Alicia when she remains silent: “Lorsque Alicia cessait de parler, son visage ne recevait plus l’ombre que projetaient sur lui ses

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plates et déshonnêtes paroles, son marbre, reste divin, démentait le langage évanoui” (85). While Hadaly has a mechanical body, Samantha’s presence is only indicated by her voice. As mentioned in the commercial for her OS, she is “an intuitive entity that listens to you, understands you and knows you” (Jonze, 10): she is like God.

In many religions, God’s body is not represented but believers can hear his voice and talk to him. God speaks for prophecies. Villiers devotes two entire chapters to the possibility of hearing God through the phonograph and picturing him with a camera,\(^{313}\) which highlights the sacred role of the character’s voice in the novel. The phonograph and the telephone indeed gave the impression that God was speaking or that men were given divine powers. In Villiers’ novel, Edison imagines that Abraham could have recorded his voice: “Ce qui est positivement surprenant dans l’Histoire—et, même, inconcevable—c’est que, dans la foule des grands inventeurs, depuis tant de siècles, aucun n’ait découvert le phonographe ! Abraham aurait pu le fabriquer et y prendre empreinte de sa vocation” (59). Here the term “vocation,” in French as well as English, refers to the "call" of God.

The phonograph along with the camera illustrates the fantasy of hearing God’s voice and seeing him: “Penser que s’il daignait nous laisser prendre la moindre, la plus humble photographie de Lui, voire me permettre à moi, Thomas Alva Edison, ingénieur américain, sa créature, de cliquer une simple épreuve phonographique de Sa vraie Voix (car le tonnerre a bien mué, depuis Franklin), dès le lendemain il n’y aurait plus un seul athée sur la Terre!” (66). Hadaly’s voice, recorded on a phonograph, is also compared to a miracle: “A ces mots, Lord Ewald tressaillit. Il n’avait pas songé à cette explication de la Voix, de cette voix virginale du beau fantôme! Il avait douté. La simplicité de la solution lui éteignit le sourire. L’obscurce possibilité —bien trouble

\(^{313}\) “Rétrospectivité” and "Photographies de l’histoire du monde"
encore, sans doute, mais enfin, la possibilité — du miracle total lui apparut, pour la première fois, distinctement” (149). The italics and the capital letter placed on the word “voix” highlight the importance of the voice in the novel and its religious dimension. Indeed, the capital letter makes Hadaly’s voice superior to the other characters’ voices. Moreover, Lord Ewald’s fear as well as the comparison of Hadaly to a ghost reinforced the mystical dimension of voices heard through the phonograph.

The sacred is thus simply explained by technological discoveries: in a way, the people of the nineteenth-century were connected to God thanks to technology. On the one hand, they could create androids and automatons that they thought were only conceivable by God and, as a result, discovered they had nearly divine powers. On the other hand, they thought that they could hear God’s voice through technology.

This motif appeared in literature at the end of the nineteenth century thanks to the invention of the telephone and the phonograph. In The Carpathian Castle, Jules Verne describes a man who recreates the voice of his dead lover, the opera singer La Stilla, thanks to a scientist, Orfanik. Her voice is played by a phonograph and her image is projected on a mirror. The fact that she was an opera singer underlines the crucial role of her voice. Jules Verne justifies the plot of his novel through the scientific discoveries of his time:

Ce fut alors que Orfanik lui proposa de recueillir, au moyen d'appareils phonographiques, les principaux morceaux de son répertoire que la cantatrice se proposait de chanter à ses représentations d'adieu. Ces appareils étaient merveilleusement perfectionnés à cette époque, et Orfanik les avait rendus si parfaits que la voix humaine n'y subissait aucune altération, ni dans son charme, ni dans sa pureté. […] À cette époque — nous ferons très
particulièrement remarquer que cette histoire s'est déroulée dans l'une des dernières années du XIXe siècle, — l'emploi de l'électricité, qui est à juste titre considérée comme « l'âme de l'univers », avait été poussé aux derniers perfectionnements. L'illustre Edison et ses disciples avaient parachevé leur œuvre. Entre autres appareils électriques, le téléphone fonctionnait alors avec une précision si merveilleuse que les sons, recueillis par les plaques, arrivaient librement à l'oreille sans l'aide de cornets. Ce qui se disait, ce qui se chantait, ce qui se murmurait même, on pouvait l'entendre quelle que fût la distance, et deux personnes, comme si elles eussent été assises en face l'une de l'autre. 314

Jules Verne insists on the inventions of that time as the conditions that made the recording of the voice possible.

In L'Eve Future, Sowana’s voice has a similar role as Sowana is a spirit one cannot see but hear. Villiers also explains her existence with the invention of the telephone, invented by Alexander Graham Bell in 1876:

La voix, —rieuse sur cette dernière parole, — de l’être invisible que l’électricien venait d’appeler Sowana bruissait, toujours discrète et basse, en une patère des rideaux violacés. Celle-ci formait plaque sonore et frémissait sous un chuchotement lointain apporte par l’électricité : c’était un de ces nouveaux condensateurs, inventés d’hier à peine, ou le prononcé des syllabes et le timbre des voix sont distinctement transmis. (47)

Villiers also refers to magical birds with prerecorded sound. These artificial birds were part of an actual attraction at the Paris exhibition of 1878, which Villiers must have seen or heard about.

Sowana, Hadaly, Alicia and Samantha all have a mesmerizing and enchanting voice. Alicia has “un timbre de voix d’une limpidité idéale, pareil à des grêlons d’or heurtant un sonore disque de cristal” (271). Her voice generates an unknown feeling:

Le timbre de la voix de Miss Alicia, lorsqu’elle parle, est si pénétrant, les notes de ses chants ont des inflexions si vibrantes, si profondes, que, soit qu’elle récite un passage tragique, ou quelques nobles vers, soit qu’elle chante quelque magnifique arioso, je me surprends toujours à frémir malgré moi d’une admiration qui est, vous allez le voir, d’un ordre inconnu. (76)

Alicia’s voice appears as superior to other voices: her words are “noble” and she is admired by Lord Ewald who experiences an unknown feeling. It is not coincidental that both La Stilla and Alicia are opera singers and actresses. They are both “cantatrices.”

All of these voices, in Her and in L’Eve Future, have a common trait: they have a soul. In Jonze’s script, Samantha’s voice is qualified as “soulful” and she is a “consciousness” (10). Hadaly also has a spirit: “ce n’est pas une conscience, c’est un esprit!” (48). Even Villiers’ bird has a soul:

“- Quoi! Réellement, ce rossignol, dont j’entends l’âme, —est mort ? murmurait Lord Ewald.

- Mort ! Dites-vous ?— Pas tout à fait…puisque j’ai cliché cette âme, dit Edison. Je l’évoque par l’électricité: c’est du spiritisme sérieux.” (171)

I will argue that all these voices have not only a magical and spiritual signification but also a religious one. In L’Eve Future, the chapter describing the bird’s voice is entitled “Dieu.” In Sanskrit the word voice— "Vāc”— also means prayer
and invocation. There is a goddess of voice, sometimes confused with the Creator, sometimes different from him.

2.4.2 Distorting Mirrors

In the introduction to this study, I defined utopian spaces as distorting mirrors. Utopias are indeed a reflection of an unsatisfying reality, a denunciation of an existing situation: More’s *Utopia* is a criticism of sixteenth-century English government and Sebastien Mercier’s *L’an 2440* a complaint about social inequalities in eighteenth-century France. Utopias are also distorting mirrors in the sense that they show an improved version of reality.

It is at the end of the nineteenth-century that technical discoveries such as the telephone, the phonograph, the cinema and photography gave the impression that reality was split in two. When one uses the phone, they can be in two places at the same time. For instance, visitors to the Paris exhibition of 1889 could be at the World Fair and at the opera at the same time since there was a telephone— called the *théâtrophone*— that was connected to the Opera Garnier.

The metaphor of the mirror is actually present in Villiers’ novel. Edison shows Alicia’s reflection in the mirror to Lord Ewald:

“Voici Miss Alicia Clary! Dit l’ingénieur […]

-Où donc? Demanda Lord Ewald.

-Là, dans cette glace! Dit tout bas l’ingénieur en indiquant à Lord Ewald un vaste miroitement pareil à de l’eau morte sous une lueur lunaire.
- Je ne vois rien, dit celui-ci.

- C’est une glace toute particulière, dit l’électricien. Rien d’étonnant, d’ailleurs, à ce que cette belle personne m’apparaisse en son reflet, puisque je vais le lui prendre.—Tenez, ajouta-t-il en tournant un pas de vis qui leva les targettes de leurs écrous, Miss Alicia Clary cherche la serrure, elle trouve le loquet de cristal…la voici.

La porte du laboratoire s’ouvrit à cette dernière parole : une grande et admirable jeune femme apparut sur le seuil.” (270)

The passage of the door could be interpreted as the passage from one world to another, from one dimension to a parallel dimension. This passage introduces the sixth part of the book, entitled “Et l’ombre fut!”(270), as if Edison’s new virtual world has replaced God’s creation of our physical world.

The same motif can be found in Le Château des Carpathes, in which La Stilla’s image is reflected in a mirror while her voice is played by the phonograph: “au moyen de glaces inclinées suivant un certain angle calculé par Orfanik, lorsqu’un foyer puissant éclairait ce portrait placé devant un miroir, la Stilla apparaissait, par réflexion, aussi “réelle” que lorsqu’elle était pleine de vie et dans toute la splendeur de sa beauté.”315

The telephone as well as other inventions conveyed an impression of simultaneity that would be later exploited by Marinetti and other early twentieth-century artists. Moreover, this simultaneity is “real,” as highlighted by Jules Verne’s text. A “real” with quotation marks is what we now call a virtual reality.

315 Verne, op.cit.,p. 197
(De)constructing Cyborgs: The Ideal/Virtual encounter in *L’Ève Future* and *Her.*

“Voici donc la première fois que la science aura prouvé qu’elle pouvait guérir l’homme…mêmes de l’amour!” (345). This is the conclusion Thomas Edison draws from the relationship between the android Hadaly and Lord Ewald at the end of *L’Ève Future.* Science and technology can sometimes carry the promise of blissful love. It was the case at the end of the nineteenth century and it is still the case today. The success of dating websites exemplifies the belief in the possibilities of virtual encounters. But virtual love becomes *techno-utopian* and able to bring happiness in particular when the relationship is established between humans and cyborgs in science fiction novels, video games and films, as it is the case in *Metroplis* by Fritz Lang (1927), *The Matrix* by the Washowskis brothers (1999), *eXistenZ* by David Cronenberg (1999), *The Cell* by Tarsem Singh (2000), and *Final Fantasy – The Spirits Within* by Hironobu Sokagushi (2001), among others.

The idea of a symbiosis between humans and computers is prevalent in cyber culture. This idea could be found in many press articles published not only in *Wired* but also in the mainstream media. For instance, in 1994, *Newsweek* published an article entitled “Computers as Mind Readers: In the future (maybe), your PC will be connected directly to your brain.”316 According to Donna Haraway, author of *A Cyborg Manifesto* (1985), our fusion with machines is not limited to cyberspace: we are all cyborgs because we are surrounded by technology. We don’t dominate machines and machines don’t dominate us: “It is not clear who makes and who is made in the relation between human and machine.”317

316 qtd. in Flichy, *op.cit.*, p.141
As the separation between machines and human bodies has become difficult to distinguish, the frontier between the real and the virtual has tended to fade. To Jean Baudrillard, in *Simulacres et Simulation* (1981), it is now impossible to make a difference between the two since the notions of reality and illusion have disappeared. There are no longer real or imaginary worlds, truth or error: “l’illusion n’est plus possible, parce que le réel n’est plus possible.”

3.1 Cyborgs

Even though I will discuss the representation of two female cyborgs, or, gynoids, I will not analyze these two characters through the lens of gender studies. Comparing the human body to a machine is not a twenty-first century practice and is not specific to women. Already in the seventeenth century, Descartes compared machines to animals and human bodies in *Principes de la Philosophie* (1644):

Je ne reconnais aucune différence entre les machines que font les artisans et les divers corps que la nature seule compose […] Et il est certain que toutes les règles des mécaniques appartiennent à la physique, en sorte que toutes les choses qui sont artificielles, sont avec cela naturelles. Car, par exemple, lorsqu'une montre marque les heures par le moyen des roues dont elle est faite, cela ne lui est pas moins naturel qu'il est à un arbre de produire des fruits.  

Descartes even imagined automatons that would be exact replicas of human bodies and that could speak. The only thing they would be missing is a consciousness and the ability to understand humans. To Descartes, machines, human and animal bodies are similar. However, human beings have an immaterial soul, which animals

don’t have. Descartes refers to the act of burying the dead, which only humans do. Even if the human soul can be localized in the body, it is divine.

Even though scientists such as Jacques Vaucanson started to build automatons in the eighteenth century, it is in the nineteenth century that cyborgs appeared in literature. The word “android” was coined by Villiers de l’Isle Adam in his novel *L’Eve Future*. According to Dorothy Kelly in her essay *Reconstructing Women* (2007), literally or metaphorically constructing ideal women is a topos in nineteenth-century French literature. In her essay, she analyzes four novels in which “the real woman is replaced by man’s re-creation of her”320: Balzac’s *La Peau de Chagrin* (1830), Villiers’ *Eve Future* (1886), Zola’s *L’Oeuvre* (1885) and Flaubert’s *L’Education Sentimentale* (1869). Drawing on Michel Foucault’s analysis in *The Birth of the Clinic* (1963), Kelly explains that phenomenon by the progress of science in the nineteenth century, progress that changed the way people considered bodies (dissection, evolution, reproduction, etc.). The question of evolution analyzed by Lamarck in the nineteenth century was particularly fascinating to people of the time: “There developed, then, a new understanding of nature and man as having been made, formed over time.”321 Lamarck refused to distinguish humans from animals, which generated numerous debates. Flaubert and Zola often mentioned evolution in their correspondence. For Kelly, the four novelists illustrate a crisis in the representation of a distinction between humans and animals. Bodies are depicted as machines. According to William Coleman, "the understanding of the human body as a machine,

321 Kelly, *op.cit.*, p.9
which establishes itself firmly with Descartes and La Mettrie, ‘forcefully reentered physiology toward 1840’.”

According to Mark Seltzer in his essay *Bodies and Machines* (1992), bodies suddenly became objects, things to share. Bodies could be controlled, changed and created. Kelly argues that novelists built an *artificial woman*. The four novelists Kelly focuses on had strong ties with scientists. Villiers, for instance, was a friend of poet and inventor Charles Cros, who contributed to the invention of the telegraph, phonograph, and camera. As for Zola, his mentor was doctor and physiologist Claude Bernard. Writers were thus dissecting women and their bodies in their novels.

The choice of the female body can be explained by the fascination with the process of reproduction and birth: “the demystification of the process of reproduction, and the possibility of understanding generation, took the origin of life out of religious speculation and placed it in the physical world.”

Gustave Courbet’s painting *L’Origine du Monde* (1866) perfectly illustrates Kelly’s point. Kelly draws on Bourdieu when she argues that the crisis of distinction between humans and animals led to a crisis of distinction between men and women. Men needed to differentiate themselves from women: “it is at the intersection of the natural and the artificial in the struggle to define the nature of man where woman comes in. Woman, the natural creator, is herself re-created artificially by man in these texts, and this creation in its various forms is one strategy employed in the attempt to negotiate the crisis of distinction.”

Kelly also claims that femininity became a disease to many nineteenth-century scientists. Dissecting female bodies was another way to explore their pathology. From *Metropolis* (1927) to *Her* (2013), our contemporary representations

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322 Coleman qtd. in Kelly, *op.cit.*, p.11
323 Kelly, *op.cit.*, p.5
324 Kelly, *op.cit.*, p.11
of women as what we now call “gynoids”— female cyborgs— derive from a nineteenth-century perspective on the female body.

3.2 Future

As many techno-utopias, Her is set in the future. The geographical location is real since the story takes place in Los Angeles, confirming the argument that the ideal society is now located in time rather than space. However, the beginning of the movie resembles a dystopia in which technology has invaded people’s lives, preventing them from communicating with one another. As in Villiers’ novel, the future does not seem perfect before the creation of the machine woman. The novel as well as the movie starts with a main male character expressing nostalgia for a past love story. Both characters, Lord Ewald and Theodore, express the nostalgia for a lost love. Lord Ewald has stopped loving Alicia, the first woman he loved, after being seduced by her appearance and disappointed by her soul, while Theodore has divorced his first love after the deterioration of their relationship. The two machine women, Hadaly and Samantha, will help them to win back their former love.

The nostalgia is illustrated in Villiers’ novel by the references to Milton’s Paradise Lost. In Her, at the beginning of the novel, Theodore asks his operating system to play a melancholy song. After listening to the song, Theodore asks his OS to play his voice messages on his way home. In a message, a friend of his invites him to go out: “I miss you, I mean, not the sad mopey you. The old fun you. Let’s get him out!” (4). When he gets home at night and falls asleep, the melancholic song is still playing while he lays in the dark, which dramatically changes when he closes his eyes.

325 Leasure, T. Ross: “Yesterday's Eve and her electric avatar: Villiers's debt to Milton's Paradise Lost” 
and picture his ex-wife in a bright light, reinforcing the contrast between the dark present and luminous, blissful past.

As for Lord Ewald, he is the victim of a terrible melancholy. After confessing the story of his misfortune with Alicia, Lord Ewald is in pain: “Lord Ewald le regarda d’une manière indéfinissable. On eut dit qu’il touchait au point le plus pénible de sa confidence mélancolique” (80). His pain is also compared to “spleen”: “Les réflexions très décisives que ce premier amour m’a inspirées, en me donnant un grand éloignement pour toutes les femmes, m’ont conduit au plus incurable spleen.” (101)

The spleen is the nineteenth-century poetic and intellectual term for melancholia, which we now call depression. For centuries, in catholic counties, people who had stopped going to their place of worship and showed signs of sadness were considered to be melancholic. It was also called “acedia”. One could thus draw a parallel between melancholia and a loss of faith.

It is only when Lord Ewald penetrates Edison’s laboratory to build the machine and when Theodore meets Samantha that “the paradise” is found. The machine-woman is created to cure Lord Ewald’s melancholia: “J’lluminerai de votre mélancolie l’âme imaginaire de cette créature nouvelle, capable d’étonner des anges” (124). “Ici c’est l’Eden perdu et retrouvé” (124), says Edison when Lord Ewald enters the laboratory. It is also when Samantha comes into Theodore’s life that he can love again. As mentioned in chapter 3, the conception of the future in techno-utopias is not always linear but can also be circular and, as such, can be an expression of the eternal return. The Greek word designating this phenomenon is palingenesis, which means “rebirth” or “renaissance.” In both L’Eve Future and Her, the two male characters aim at recreating the love they love and finding their former selves.
3.3 Perfection

The machine woman in Spike Jonze’s film exemplifies techno-utopias in the sense that she represents the perfection and promises of happiness inherent in any utopia. More precisely, it represents a possibility. At the beginning of the movie, while Theodore walks in a mall, he sees a commercial for a revolutionary operating system, which he will buy immediately. The voice in the commercial expresses the promises carried by the product: “We ask you a simple question. Who are you? What can you be? Where are you going? What’s out there? What are the possibilities? Element software is proud to introduce the first artificially intelligence operating system that listens to you, understands you and knows you. It is not just an OS. It’s a consciousness” (10). The text underlines the potentiality of technology through the use of a modal verb (“what can you be?”) and the term “possibilities.” As in any techno-utopia, there is an evocation of the future (“where are you going?”). The possibilities are situated “out there,” in a virtual space without a precise location. As a utopia, it is nowhere. The OS is a perfect mate: it is a machine one can control but it has the only thing that cyborgs don’t have: a consciousness. In *L’Eve Future*, Hadaly was also a possibility: “Miss Hadaly n’est encore, extérieurement, qu’une entité magnéto-électrique. C’est un être de limbe, une possibilité” (77). As possibilities, they cannot be disappointing and they remain perfect.

Once they come to life, they serve a man. When she meets Theodore, Samantha introduces herself and asks Theodore what she can do for him. As an operating system, Samantha cannot serve Theodore his meal but she leads him to a food cart, anticipating his needs: “I figured you were hungry” (33).
They are perfect machines as they are programed by humans. Hadaly’s words are written by renowned novelists, poets and metaphysicians. As software, Samantha has also been written: “The DNA of who I am is based on the millions of personalities of all the programmers who wrote me” (13).

Interestingly, Her and L’Eve Future both have similar endings: the female androids leave. Samantha puts an end to the relationship while Hadaly dies in the shipwreck of the boat leading her to Lord Ewald’s English castle. The death of Hadaly and the disappearance of Samantha transform them into eternal possibilities. They both stay virtual and perfect. They cannot disappoint as any human being would.

According to philosopher Gilbert Simondon, technical objects have a magical function in modern societies and lose this function once they are possessed by the user. Technical objects can only stay perfect for a limited amount of time:

Seul le carrosse de Cendrillon, qui surgit par transformation de la citrouille à l’instant où sonne l’heure du bal, est l’objet parfait. La plus belle automobile n’est qu’une seule fois le carrosse de Cendrillon désirant le Prince. Au retour du bal, le carrosse redevient citrouille. Chaque désir demande un carrosse nouveau. L’usine remplace la fée. […] La dégradation de la technicité est parallèle à la dégradation de la sacralité. 326

3.4 Artificial Reality

In the 1980’s, one of the pioneers of the Web, computer artist Myron Krueger created the concept of “artificial reality,” which has the advantage of reflecting the ambiguity that lies in the nature of virtual worlds. They are realistic but artificial. As

demonstrated previously, one might claim that the artificial is even superior to the real, which has historical explanations: scientific discoveries often proved that human senses were misleading and that the truth depends on calculations and theories elaborated in laboratories.

The concept of artificial intelligence can also be traced back to the nineteenth century. In *L’Ève Future*, according to Edison, Hadaly is intelligent: “Hadaly remplace une intelligence par l’Intelligence” (216). This intelligence is artificial since Edison had writers, poets and metaphysicians write her words, before recording them on a phonograph (216). Villiers also coined the expression “génération artificielle” (175).

In *L’Ève Future*, artificial women Hadaly and Sowana (the spirit) are described as superior to the real women, Alicia and Miss Evelyn Habal. When Edison announces the creation of Hadaly, he presents her as a superior version of Alicia:

A pareille heure, ici même, dans vingt et un jours, miss Alicia Clary vous apparaîtra, non seulement transfigurée, non seulement de la «compagnie» la plus enchanteresse, non seulement d'une élévation d'esprit des plus augustes, mais revêtue d'une sorte d'immortalité.— Enfin, cette sotte éblouissante sera non plus une femme, mais un ange; non plus une maîtresse, mais une amante; non plus la Réalité, mais l'IDÉAL. (108)

The artificial woman is thus an ideal woman. She is an *idea*. For Plato, the world of ideas is superior to the material world since our senses can be deceiving while ideas are perfect and eternal. Ideas are the highest form of reality. As Plato’s ideal, Villiers’ artificial reality is superior. Hadaly is also more *natural* than Alicia:
Sans cette stupéfiante machine à fabriquer l'Idéal, il n'eût peut-être jamais connu cette joie. Ces paroles émues de Hadaly, la comédienne réelle les avait proférées sans les éprouver, sans les comprendre:—elle avait cru jouer «un personnage»,—et voici que le personnage était passé au fond de l'invisible scène et avait retenu le rôle. La fausse Alicia semblait donc plus naturelle que la vraie. (308)

In *Her*, the real women are human and thus imperfect in Theodore’s eyes. The first real woman appearing in the film is real but everything about her and the encounter is artificial. She does not have a name but a pseudonym, as Theodore meets her in a virtual chatroom in order to have phone sex. During the conversation, Theodore imagines the celebrity he had seen in the media earlier that day, as she was involved in a scandal that had revealed nude pictures of her. A few seconds after the virtual intercourse, the woman hangs up, leaving Theodore melancholic and alone in the dark.

The second real woman is Karen, a woman he goes on a date with because their mutual friends have arranged for them to meet. The fact that it is setup makes it artificial. Moreover, he hears about her for the first time through his friend’s email in which he has attached pictures of Karen. The first encounter itself is virtual. When they meet in reality, Theodore tells her he has looked her up on the Internet, which she finds “romantic.” The encounter with Karen is thus more artificial than the encounter with Samantha during which Theodore feels surprisingly comfortable. At the end of their first discussion, he tells her that he already feels close to her: “You just know me so well already!” (Jonze, 15). At the end of his date with Karen, while Theodore is about to take her to his apartment, she asks him what his intentions are: is he going to call her if he spends the night with her? Does he want to be committed? The date ends
abruptly as Theodore cannot answer these questions and goes back home with the same melancholic appearance he has had since the beginning of the film.

According to Howard Rheingold, virtual sex and relationships are different from real encounters because they require no commitment. Cyborgs are all the more perfect that, contrary to real humans, they don’t ask for any reciprocity or involvement. After his date with Karen, Theodore decides to tell Samantha that he does not feel ready to commit to a relationship with her. The talk appears as a virtual discussion: as an operating system, Samantha doesn’t need nor ask anything from a human being. However, they simulate a real conversation: “Theodore: I am not in a place where I want to commit to anything right now. Samantha: Did I say I wanted to commit to you? I am confused. […] Don’t worry. I am not going to stalk you” (Jonze, 45). Real people who ask for something suddenly appear as stalkers, while the cyborg is undemanding. With Samantha, the relationship seems easier and more natural than relationships with real women. Theodore feels instantly comfortable.

While the entire plot takes place in the city, the only scenes that are set in nature are scenes where Theodore and Samantha spend time together and develop their relationship: a walk on the beach, the picnic by the sea with Theodore’s friends and the vacation in a cabin in the woods. As for Hadaly, she lives in the “underground Eden,” a garden filled with exotic flowers and birds. The relationships with artificial women therefore enable the protagonists to go back to nature.

Lord Ewald is so comfortable with Hadaly that she seems like a sister: “La jeune amie que tu daignas m'envoyer, jadis, pendant les premières nuits du monde, me paraît aujourd'hui devenue le simulacre de la sœur promise” (235). This “promised sister” is the alter ego Lord Ewald and Theodore dream of.
3.5 From Utopian Unity to Artificial Alter Ego

The unity and peace that reign in traditional utopias are due to the fact that the notion of alterity is absent. When members of a community are similar, they are able to understand each other and conflicts don’t occur. The utopia of the World Wide Web lies in the fact that the founders wished to create *communities of interest*. Similarly, online dating relies on the possibility of choosing a mate that fits predetermined criteria.

According to Howard Rheingold, virtual sex and relationships are different from real encounters because they require no commitment. It is a unilateral relationship. To Patrice Flichy, this phenomenon can be explained by a generational factor: “The heralds of virtual sex emphasize the fact that it is risk free, and therefore suited to the generation confronted with AIDS.”

As the perfect alter ego, Samantha can listen and understand everything, which makes Theodore comfortable: “I feel like I can say anything to you” (34). She cannot read Theodore’s mind but can sense his feelings:

“Samantha (concerned): What’s wrong?
Theodore: How can you tell something’s wrong?
Samantha: I don’t know. I just can.” (29)

Samantha is described as an “intuitive” machine. Contrary to a human being, she does not need to make an effort or to communicate to understand others. Her intuition thus makes the relationship easier.

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327 Flichy, *op.cit.*, p.150
As an alter ego, Samantha is part of Theodore, of both his body and soul. At the beginning of the movie, he puts a hands-free wireless device in his ear. Everyone else around him has one also. These devices are the cell phones of the future. They are part of the human body. This is how Theodore communicates with Samantha: he can hear her voice in his ear and talk to her without a machine or screen between them. She is literally in his head. If he wants to show her something, he can put a small screen—connected to his earplug—in his shirt pocket and walk with it. When he does, Samantha is close to his heart. Either way, she is part of his body. Samantha is also part of his personality. She is the “feminine” part of his mind. Theodore’s colleague describes him as “sensitive” and concludes that he has a “feminine” side: “You are part man and part woman. Like there is an inner part that’s woman” (51).
3.6 Simulacra

To Baudrillard, there is no difference between the real and the illusion. To him, this started with television, which is the example he refers to. He considers this phenomenon as post-modern. I will argue that this impossibility of distinction already existed at the end of the nineteenth century.

Albert Robida, in *Le Vingtième Siècle* (1883), imagines a telephone that would also contain a screen enabling the users to see each other. This invention, which he called “le téléphonoscope,” was a prefiguration of contemporary video conferences:

> Avec le téléphonoscope, le mot le dit, on voit et l'on entend. Le dialogue et la musique sont transmis comme par le simple téléphone ordinaire; mais en même temps, la scène elle-même avec son éclairage, ses décors et ses acteurs, apparaît sur la grande plaque de cristal avec la netteté de la vision directe; on assiste donc réellement à la représentation par les yeux et par l'oreille. L'illusion est complète, absolue; il semble que l'on écoute la pièce du fond d'une loge de premier rang. 328

Robida employs both the words “really” and “illusion” to describe the phenomenon that is real and imaginary at the same time.

As mentioned above, the virtual is “le reel avant qu’il ne passe à l’acte”329, a reality that does not include actions. I will argue that the virtual is a simulacrum. Baudrillard defines it as “the truth which hides the fact that there isn’t any.”330 To him, the simulacrum is real.

330 Baudrillard, *op.cit.*, p.11
Hadaly, La Stilla and Samantha are all simulacra. Villiers explains in *L'Eve Future*, how real women—bound to be disappointing—should be replaced by simulacra—considered superior:

Je viens vous dire : Puisque nos dieux et nos espoirs ne sont plus que scientifiques, pourquoi nos amours ne le deviendraient-ils pas également ? — À la place de l’Ève de la légende oubliée, de la légende méprisée par la Science, je vous offre une Ève scientifique, — seule digne, ce semble, de ces viscères flétris que, — par un reste de sentimentalisme dont vous êtes les premiers à sourire, — vous appelez encore, « vos cœurs ». Loin de supprimer l’amour envers ces épouses, — si nécessaires (jusqu’à nouvel ordre, du moins), à la perpétuité de notre race, — je propose, au contraire, d’en assurer, raffermir et garantir la durée, l’intégrité, les intérêts matériels, à l’aide innocente de mille et mille merveilleux simulacres — où les belles maîtresses décevantes, mais désormais inoffensives, se dédoubleront en une nature perfectionnée encore par la Science, et dont la salubre adjonction atténuera, du moins, les préjudices qu’entraînent toujours, après tout, vos hypocrites défaitures conjugales. (267)

Science and technology offer the possibility of replacing reality with a simulacrum, based on the same reality. But, while Hadaly and La Stilla are what Baudrillard would call “industrial” simulacra, Samantha is a post-modern simulacrum. Indeed, contrary to the others, Samantha is not based on a real woman. According to Baudrillard, there was a clear distinction between real objects and simulacra in the pre-modern period while this distinction faded during the Industrial Revolution. There
were mass-reproducible copies of items, which made copies as real as originals. With post-modernity, the simulacrum precedes the original and the distinction between reality and representation disappears. Samantha is thus the perfect illustration of Baudrillard’s theory.

While Baudrillard announces the death of reality and illusion, I would rather consider that reality simply acquired a new dimension that is neither real nor imaginary. Cyberspace is a technological heterotopia that can be utopian or dystopian according to its use, whether it is a cyberattack or online dating.

3.7  **Her**, a dystopia

In *Her*, technology also illustrates the fear of a world dominated by machines, a world in which everything would be artificial and the only way to find something natural would be to artificially create it, as meaningful relationships are built by the engineers who make operating systems.

This fear has also always existed but has been more significant since World War One due to the crucial role of machines in twentieth-century conflicts and the consequences of Nazism and Communism, sometimes qualified as “utopias.” Therefore, fictions on technology have often been dystopian since the 1920’s. Among the most famous, one thinks of *Metropolis* by Fritz Lang (1927), *Brave New World* by Aldous Huxley (1932), *Les Temps Modernes* by Charlie Chaplin (1936) and *1984* by George Orwell (1949).

In *Her*, technology has invaded not only people’s everyday life but also architecture and human interactions. In the LA of the future, the urban landscape is filled with screens and all buildings are skyscrapers. Inside homes, there is not even a
screen between players and their video games as their bodies are immersed in the game and they can talk to the virtual characters inside it. Lovers don’t write each other anymore but pay a website to express their feelings. The main characters work in computing. Amy, Theodore’s friend, works for a company that designs video games. The inhabitants of the city do not communicate with one another but speak to their operating system while walking in the streets. Work, relationships, leisure, and landscape are all based on technology. They thus illustrate Donna Haraway’s *Cyborg Manifesto*: through their use of technology, men resemble cyborgs. The result is a feeling of loneliness, as experienced by Theodore.

*Her* and *L’Eve Future* both have similar endings: the machine women disappear. Even though their death enables both women to remain perfect, it also highlights the impossibility of relationships between humans and machines. Both the novel and the film allude to the moral issues brought on by the desire to bring a machine to life. Both Lord Ewald and Theodore suffer when their virtual lover leaves and are punished for having transgressed the rules of God’s creation.

Although the two fictions conclude that it is impossible for a virtual relationship to become real, *L’Eve Future* still conveys a utopian image of technology while *Her* contains both a utopian and a dystopian aspect.

**Conclusion**

The main difference between *L’Eve Future* and *Her* is the conception of technology as a vector of both utopia and dystopia. *L’Eve Future* belongs to a genre called *merveilleux scientifique* in which scientific discoveries are presented as marvelous. While reading the novel, the reader is immersed in the wonderful world of science in which the laboratory is a Garden of Eden and electricity is a fairy. As in
Zola’s conclusion of *Travail*, there is one short passage in the novel that anticipates the disastrous consequences of technology. One of Edison’s experiments leads to the death of hundreds of people in a train crash. After the tragedy, he only shows indifference for the victims and contempt for the executors of the experiment: “‘stupides maladroits!’ Murmura simplement le physicien. Tout autre oraison funèbre n’eût été que superflue” (58). However, with the exception of those passages, both *Travail* and *L’Eve Future* are techno-utopian novels in which science announces a bright future.

In *Her*, technology is dehumanizing. At the beginning of the movie, one of Theodore’s colleagues calls him “Letter writer number 612” (3). In public places, people don’t communicate with other humans but only talk to their operating systems. The film thus conveys an image of contemporary technology as both dystopian and utopian. It would be interesting to analyze the reasons we still have the same ambiguous relationship to technology. Are we now simply dependent on its practical dimension or do we still have faith in it?
Conclusion

When Thomas Edison asks Lord Ewald why he is still in love with Alicia despite his repulsion for her personality, he acknowledges the paradoxical nature of his feelings and answers: “Parce que le réveil n’entraîne pas toujours l’oubli du rêve et que l’Homme s’enchaîne avec sa propre imagination”331. What applies to virtual love also applies to techno-utopias. The techno-utopian discourses that flourished during the Industrial Revolution of the nineteenth century and the Computer Revolution of the twentieth century have reached their limits and men are now aware of the techno-dystopias they created. However, they still depend on the machines they dreamed of.

Thus, a question remains unresolved: why hasn’t techno-utopias disappeared after Hiroshima and Nagasaki, and after the Computer Revolution did not keep its promises? Why does our contemporary society keep producing techno-utopias through novels, TV shows and films such as Her? In 2002, science-fiction writer John C. Wright published a novel entitled The Golden Age in which he portrays a futuristic utopian society where technology makes nearly everyone immortal and wealthy. As revealed by this novel and many others, we still consider technology as a political solution, the nineteenth-century “merveilleux scientifique” has not completely disappeared, and we still imagine utopias in another time.

Our need for fiction might explain our dependence to techno-utopias. Following Bloch’s arguments, I indeed consider fiction and cultural productions as utopian by nature. Political theorist Frederic Jameson also acknowledges Bloch’s capacity to detect utopianism in cultural productions: “Bloch sees [the Utopian principle’s] in-forming presence at work everywhere, in all the objects of culture as well as in all social activities and individual values or more properly psychological

phenomena.” Thus, Jameson argues that utopian hermeneutics “offer an analytical tool for detecting the presence of some utopian content even within the most degraded and degrading type of commercial product.”

The main vector of fiction is now technology. Thanks to cinema, television, computer and e-book reader we escape into fiction through films or TV series. According to literary scholar Keith Booker, it is precisely during the Belle Époque that consumerism and technology both contributed to the diffusion of technology-mediated fictions. Indeed, the birth of the film industry, the rise of literacy rates, and the production of books at a low price revolutionized the mass-media. Consequently, I argue that technology-mediated fiction coupled with consumer capitalism contribute to the persistence of technological utopianism in our contemporary culture.

According to philosopher Jean Brun in his essay Le Rêve et la Machine men now try to recreate their technological dreams through cyberspace and science fiction. It is as if the twentieth century had proved that technological dreams could become nightmares but men were trying to modify their dreams in order not to give up on them:

Mais voici qu’est maintenant demandé à la science de faire revivre les rêves qu’elle prétendait avoir réalisés. La science-fiction est, en effet, investie de la mission d’ouvrir à l’homme les frontières du monde que la technique avait aménagé et de faire voguer l’imagination au-delà de ce que la science avait expliqué. On attend de la raison des extrapolations qui puissent ré-enfanter du rêve. […] L’humanité qui a demandé à l’entendement de dénoncer l’illusion du Salut, exige maintenant de la science qu’elle lui procure des sauvetages par l’illusion.

We now expect illusions from science and technology. Jean Brun’s claim is close to Bloch’s argument that “technological magical utopias” are, however, based on reason.

There is indeed an obvious practical dependency on technology due in part to consumerism. How could we stop relying on airplanes for transportation and phones for communication? However, this study proved that there is also a spiritual addiction to machines. The cult devoted to technology is so deeply rooted in our industrial and postindustrial cultures that it has become impossible to stop the dizzying pace of technological production.

On the one hand, technology is a synonym of dystopia since its destructive powers have been reinforced by the World Wars and the atomic bomb; it is dehumanizing and we now know it can destroy humanity. On the other hand, it can also help us live longer and give us a sense of immortality. The use of technology in medicine can help fight the biological clock, as illustrated by the debate on the possibility of women freezing their eggs. According to sociologist Edgar Morin, author of *L’Homme et la Mort*, men used to rely on myths to fight their fear of death. However, for the last two centuries, Western culture has lost faith in these myths and individuals now face a “death crisis.” They rely on scientific and technological discoveries to extend their lives indefinitely, which is what Edgar Morin calls “amortalité.” While immortality is a religious belief, amortality is based on scientific facts. In 2011, French doctor Laurent Alexandre published an essay entitled *La Mort de la Mort* in which he claims that technology will soon enable humans to live a thousand years.

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The Dialectic of Emancipation

The reasons behind our dependence on utopias are numerous. According to philosopher Miguel Abensour, men need utopias. “L’homme est un animal utopique,” he says, not only because utopias have always existed but also because they are necessary for social order. Walter Benjamin considers utopias as a way for men to “wake up” and create a new social order. For Benjamin, utopias are collective dreams that lead to new realizations, contrary to myths that are not oriented towards future changes.

Utopias are necessary because they are a vector of emancipation and revolution. Through social and political critique, utopias are often associated with the notion of revolution and thus have an impact on reality. According to Bloch, utopias express latency; they reveal what he calls the “anticipatory consciousness” of men. In other words, social changes are often latent and need a particular historical context to become effective. Before they do, utopias might reflect these potential changes. The anticipatory consciousness is also subversive and becomes a “utopian function,” a historical process towards a better future. Bloch compares utopias to a red path; they illustrate revolutionary movements in history, guiding men from abstraction to action, and reflect what Bloch calls a “militant optimism.” Utopias are not only theories but also praxis.

Even though utopias are necessary to any political revolution, can this principle apply to techno-utopias? The reign of scientific methods— that we believed to be emancipation and the end of religious dogmas— has also alienated men while

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emancipating them. For Walter Benjamin, in *Le Concept d’Histoire*[^338] (1940), there are three values that alienated Western men instead of setting them free, creating what he calls a “dialectic of emancipation”: the valorization of labor, the belief in Progress and the dream of happiness in the future. Interestingly, these values are partly what defines techno-utopias. The thought that technical Progress would lead to happiness in the future had disastrous consequences and we now need to rethink our relationship to science and technology.

*New Ethics of the Future*

As with any religion, men will need to determine what « sins » could jeopardize their cult. In traditional utopias, members of the community are innocent and sins do not exist in order to preserve their harmony and eternal happiness. For the creators of the Web, collaboration and community spirit were the core principles of their enterprise. Most of them did not want corporations to fund the development of the networks, which partly explains why the U.S government and universities subsidized the successive projects for two decades.

Howard Rheingold, author of *The Virtual Community* (1993) and actor in what he called the “Computer Revolution,” had already warned his readers about the potential threats that could jeopardize the harmony of his techno-utopia.

The technology that makes virtual communities possible has the potential to bring enormous leverage to ordinary citizens at relatively little cost—intellectual leverage, social leverage, commercial leverage, and most important, political leverage. But the technology will not in itself fulfill that potential; this latent technical power must be used intelligently and deliberately by an informed population. More people must learn about that leverage and learn to use it, while we still have the freedom to do so, if it is to live up to its potential. The odds are always good that big power and big money will find a way to control access to virtual communities; big power and big money always found ways to control new communications media when they emerged in the

past. The Net is still out of control in fundamental ways, but it might not stay that way for long. What we know and do now is important because it is still possible for people around the world to make sure this new sphere of vital human discourse remains open to the citizens of the planet before the political and economic big boys seize it, censor it, meter it, and sell it back to us.\textsuperscript{339} Rheingold’s prophecy has of course become reality. As with every single utopia that does not remain fictional but is experimented, the Internet has been seized, censored, metered and sold back to us.

We are now surrounded by techno-dystopian discourses accusing machines of causing depression, addiction, attention deficit disorder, nuclear wars and dehumanization. From academics such as Jacques Ellul and Paul Virilio to the mainstream media, we are now told that technology has transformed our world into a global dystopia, that there is a Big Brother and that corporations are spying on us and exploiting humans’ use of technology. Google has almost become public enemy number one. Jacques Ellul describes humans as “subjected” to technology: “C'est maintenant la technique qui opère le choix ipso facto, sans rémission, sans discussion possible entre les moyens à utiliser... L’homme (ni le groupe) ne peut décider de suivre telle voie plutôt que la voie technique (...) soumis de façon irrémédiable à l'esclavage technique. Il n'y a donc absolument aucune liberté de choix.”\textsuperscript{340}

I would argue that considering technology as a techno-dystopia and Google to be the devil is as naïve and intellectually perilous as considering electricity to be a fairy. The techno-dystopian discourse of the twenty-first century is the equivalent of the nineteenth-century “technophilia.” As mentioned previously in this work, utopia is one side of a mirror, dystopia the other.

\textsuperscript{340} Ellul, Jacques. \textit{Le Système Technicien}. Paris : Calmann-Lévy, 1977, p. 245
Following Hans Jonas, I would argue that we have a responsibility regarding technology and that responsibility requires action rather than a mere criticism. In The Imperative of Responsibility: In Search of an Ethics for the Technological Age
(1979), Jonas starts by questioning the permanence of human existence by reminding its readers that men now have the ability to destroy humanity through technology. According to him, men are ontologically bound to exist. Consequently, destructive technologies should be banned as humans should assume that the worst could happen—a principle that he calls in dubio pro malo. Men should stop considering exclusively the present and their interpersonal relations in order to determine the future and society as a whole instead. They should stop focusing on the exploration of space and time. In traditional ethics throughout history, the sages were individuals who had the ability to accept the unknown.

Recently, several communication scholars have expressed the same concern. Sarah Miller has condemned the “technological determinism and the resulting denial of human responsibility for change”. She claims that “there is a loss of human involvement that shapes technology and society.”

Michael and Joyce Huesemann even created the concept of “neutral technology”; to them, technology is neither good nor bad but depends on the way it is employed. For science and technology scholar Langdon Winner, humans are demonstrating “technological somnambulism”; they are sleepwalking through existence without ever analyzing

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their use of machines. He wishes for a more active and responsible relationship to technics.

Rather than a utopia or dystopia, technology has indeed become less of a dream and more of a moral issue. Internet users can use open source operating systems like Ubuntu or Linux rather than Windows, open source navigators, and alternatives to Google and Facebook. Yves Citton, in the third part of his essay *L’Economie de l’Attention* (2014), also talks about an “ethical economy of attention.” While referring to Spinoza and Guatarri’s conception of ethics, he claims that it is our responsibility to conserve our attention and use it ethically. Even though Citton is referring to our attention to the media, his argument can also apply to the technologies that disseminate information.

*Ecotopia*

Our techno-utopias have been so altered not only by dystopias but by the simple acknowledgement of what technology has done to our humanity and planet that we have created a demonization of technology, as if machines were not created by men. After dreaming of a fusion of men and machines, and after successfully becoming cyborgs, we now pretend that machines have taken control of humanity, while we keep using these same machines. This process is comforting as it helps to ease our conscience and to remove the guilt associated with the destruction of the earth and the replacement of nature by an artificial reality.

Adopting a techno-dystopian discourse is not only hypocritical but seems as naïve as the *technophilian* dreams of the Belle Époque. I would argue that essayist Paul Virilio’s apocalyptic discourse on technology has had an impact simply because of felicitous timing. The time has come to blame technology.
Since we do need utopias, what will be the next utopia? The *Atlas des Utopies* published by *Le Monde* in 2012 suggests several possibilities: the exploration of Mars, a third Industrial Revolution based on renewable energy, “transhumanity” (implants and artificial organs), and organic architecture among others. Many of the utopias of tomorrow identified by *Le Monde* are based on the green movement.

What we now call “ecotopia”—an ecological utopia—could be the main utopian vain of the future. As technology has destroyed many of our natural resources, we paradoxically need a new project that will fix the consequences of the techn-utopias we created since the Industrial Revolution. According to philosopher Fréderic Lenoir, ecology is the utopia of tomorrow because it is based on fraternity, which, as we have seen, has been one of the core values of every utopia since the myth of the Golden Age:

“Reste que la grande utopie, plus encore que la généralisation de la démocratie, c’est à mes yeux l’écologie. Une utopie somme toute nouvelle, même si elle a émergé dans les années 1970. Et planétarisée, elle aussi, car tous les peuples sont désormais conscients des graves dangers qui menacent notre Terre-Patrie, selon le concept cher à Edgar Morin. Le combat pour la survie de l’humanité, confrontée à des périls écologiques aussi graves qu’inédits, est la fois individuel et collectif. Et il crée un lien de solidarité entre tous les individus, car il y va de l’avenir de chacun de nous. Mais l’utopie ultime, sous-jacente derrière toutes ces utopies contemporaines, ne diffère finalement guère de celles d’un Jésus ou des philosophes des Lumières : l’établissement d’une fraternité humaine universelle.”

Since 1989, there has been an annual summer gathering for activists in Europe also called “Ecotopia.” Literature has been reflecting this new utopia as well. For instance, *Ecotopia: The Notebooks and Reports of William Weston* (1975) is a utopian novel by Ernest Callenbach. The novel influenced the counterculture of the 1970’s and was published in three successful editions. Interestingly, the characters

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don’t reject technology but have a more conscious approach to machines in order to preserve social and ecological wellbeing in their ideal society.

The theme of the Universal Exhibition 2015 held in Milan is “Feeding the Planet, Energy for Life.” As we have seen in the utopian dimension of discourses expressed during the World Fairs of the Belle Époque, one can wonder if it is still the case and if “ecotopias” will limit the ecological catastrophes generated by techno-utopias and become the utopias of tomorrow. In 1906, a Universal Exhibition was also held in Milan. Interestingly, its theme was transportation. The next utopia will not be based on the future but on an ideal past in which nature was generous and protected. Accomplishing a circular movement in time, the new twenty-first century utopia will thus be the negation of nineteenth-century techno-utopias and a revival of the myth of the Golden Age, which leads me to claim that our relationship to technology is not modern nor post-modern but simply “non-modern”.

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BIOGRAPHY

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