TESIS DE LA UNIVERSIDAD DE ZARAGOZA

2023

65

Carmen Laguarta Bueno

Representing (Post-)Human Enhancement Technologies in 21st Century US Fiction: Richard Powers's Generosity: An Enhancement (2009), Dave Eggers's The Circle (2013), and Don DeLillo's Zero K (2016)

Director/es

Baelo Allue, Sonia
Collado Rodríguez, Francisco

http://zaguan.unizar.es/collection/Tesis

ISSN 2254-7606

Prensas de la Universidad
Universidad Zaragoza

© Universidad de Zaragoza
Servicio de Publicaciones

ISSN 2254-7606

Universidad Zaragoza

Tesis Doctoral

REPRESENTING (POST-)HUMAN ENHANCEMENT TECHNOLOGIES IN 21ST CENTURY US FICTION: RICHARD POWERS'S GENEROSITY: AN ENHANCEMENT (2009), DAVE EGGERS'S THE CIRCLE (2013), AND DON DELILLO'S ZERO K (2016)

Autor

Carmen Laguarta Bueno

Director/es

Baelo Allue, Sonia
Collado Rodríguez, Francisco

UNIVERSIDAD DE ZARAGOZA
Escuela de Doctorado

2021

Repositorio de la Universidad de Zaragoza – Zaguan http://zaguan.unizar.es

Universidad de Zaragoza, 2020

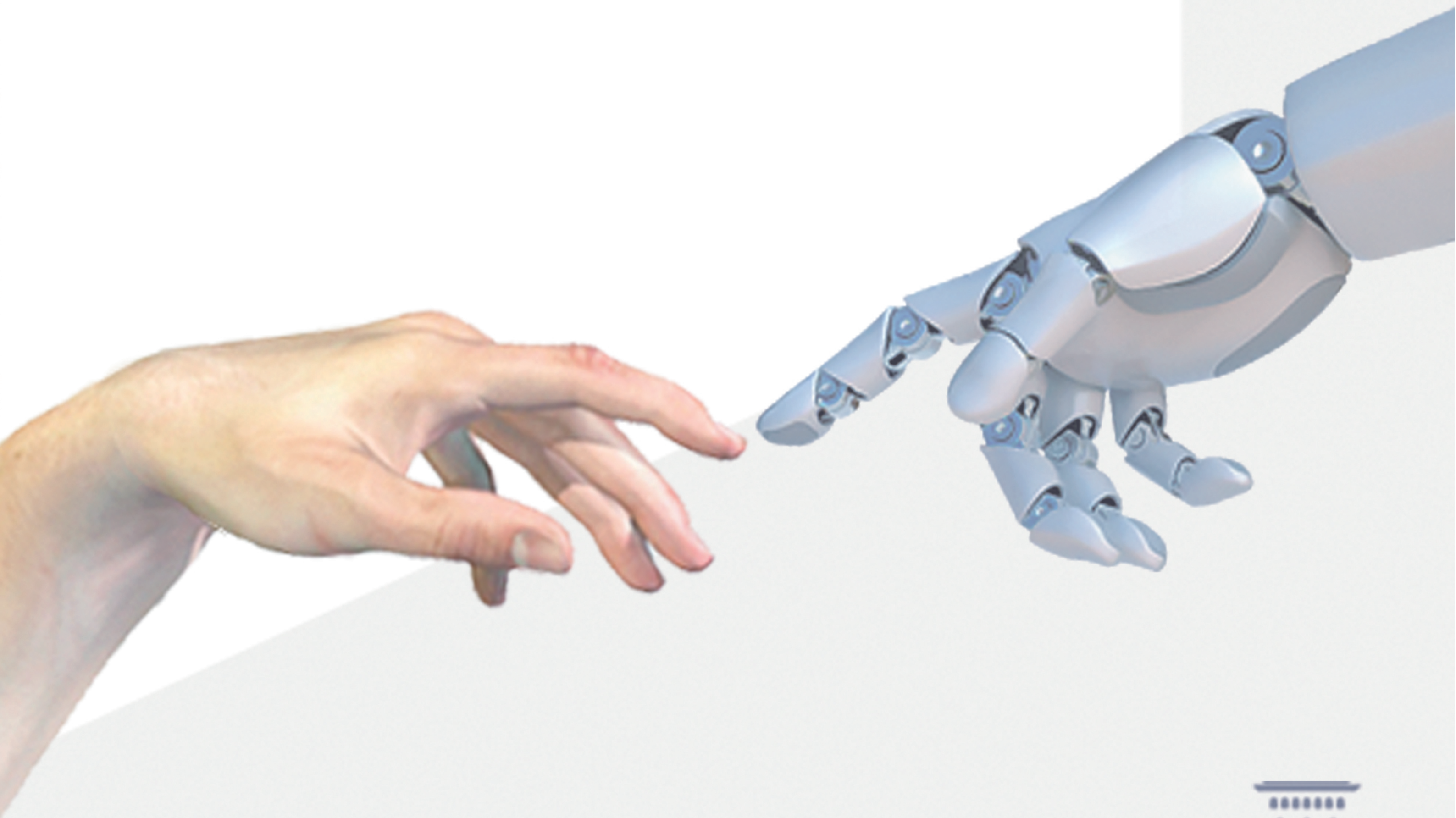
Representing (Post-)Human Enhancement Technologies in 21st Century US Fiction:

Richard Powers's *Generosity: An Enhancement* (2009), Dave Eggers's *The Circle* (2013), and Don DeLillo's *Zero K* (2016).

Tesis doctoral
Carmen Laguarta Bueno

Directores:

Dr. Francisco Collado Rodríguez
Dra. Sonia Baelo Allué



1542

Contents

Acknowledgments 1

1. Introduction and Critical Frameworks 3

1.1. TRANSHUMANISM 4
1.2. CRITICAL POSTHUMANISM 11
1.3. THE POST- AND THE TRANSHUMAN IN CONTEMPORARY CULTURE, ART, AND LITERATURE 15
1.4. CYBERPUNK, POSTCYBERPUNK, AND BEYOND 24
1.5. CORPUS OF ANALYSIS, RESEARCH AIMS, AND METHODOLOGY 31
1.6. SHORTCOMINGS OF MY/THE WRITERS' APPROACH 34

2. Richard Powers's *Generosity: An Enhancement* (2009): A Metafictional Reflection on the Biotechnological Pursuit of Happiness 39

2.1. INTRODUCTION 39
2.1.1. Richard Powers: the best of both worlds 39
2.1.2. *Generosity: An Enhancement*'s reception 44
2.1.3. *Generosity: An Enhancement*, a metafictional reflection on the biotechnological pursuit of happiness 51

2.2. *GENEROSITY: AN ENHANCEMENT* AND TRANSHUMANISM 54
2.2.1. Biotechnology and the genetic lottery for happiness 54
2.2.2. Recapitulating the debate on the biotechnological pursuit of happiness 59

2.3. *GENEROSITY: AN ENHANCEMENT* FROM THE PERSPECTIVE OF CRITICAL POSTHUMANISM 66
2.3.1. Thomas Kurton's transhumanist discourse 66
2.3.2. *Generosity*: *An Enhancement* as a metafictional novel 73
2.3.2.1. Self-conscious foregrounding of the fictional world artifice 77
2.3.2.2. Explicit narratorial address of the reader 82
2.3.2.3. Alternative endings 85

2.4. CONCLUSION 92

3. When Utopia Meets Dystopia: Social Media Tools and Surveillance Devices in Dave Eggers's *The Circle* (2013) 95

3.1. INTRODUCTION 95

3.1.1. Dave Eggers: from *A Heartbreaking Work of Staggering Genius* (2000) to *The Circle* (2013) 95

3.1.2. *The Circle*'s reception 100

3.1.3. *The Circle*'s struggling status between transhumanist utopia and technological dystopia 104

3.2. *THE CIRCLE* AND TRANSHUMANISM 106

3.2.1. *The Circle*'s social media tools and surveillance devices 106

3.2.2. Recapitulating the debate on social media tools and surveillance devices 110

3.3. *THE CIRCLE* FROM THE PERSPECTIVE OF CRITICAL POSTHUMANISM 113

3.3.1. When utopia meets dystopia 113

3.3.2. *The Circle*'s utopian promises 114

3.3.3. *The Circle*'s more dystopian reality 117

3.3.3.1. Other uses of heterodiegetic narration with focalization on Mae and free indirect discourse 117

3.3.3.2. Voices of dissent: Kalden, Mae's parents, and Mercer 123

3.3.3.3. Mottos and symbols 130

3.3.3.4. Irony and the heterodiegetic narrator 131

3.4. CONCLUSION 142

4. Transhumanism, Trauma, and the Ethics of Cryonics in Don DeLillo's *Zero K* (2016) 145

4.1. INTRODUCTION 145

4.1.1. Don DeLillo: from *Americana* (1971) to *Zero K* (2016) 145

4.1.2. *Zero K*'s reception 149

4.1.3. *Zero K*: a balanced perspective on cryonics 156

4.2. *ZERO K* AND TRANSHUMANISM 159

4.2.1. The Convergence's life extension technologies 159

4.2.2. Recapitulating the debate over life extension technologies 163

4.3. ZERO K FROM THE PERSPECTIVE OF CRITICAL POSTHUMANISM 167
4.3.1. The Convergence's reasonable enterprise 167
4.3.2. *Zero K* as a trauma narrative 173
4.3.2.1 The narrative representation of psychological trauma: minimalism, flashbacks, repetitions, and intrusive images 177
4.3.2.2. Clusters of intrusive obsessive thoughts 183
4.3.2.3. Acting out and working through 189
4.4. CONCLUSION 198

5. Conclusion 203

Works Cited 217

Acknowledgments

Of the many people—colleagues, family, and friends—who have supported me throughout the writing of this dissertation, a few in particular deserve individual thanks. I would first like to acknowledge the funding received from the Spanish Ministry of Education (FPU15/02576), which has offered me a wealth of opportunities for which I am most grateful. I also wish to express my deepest gratitude to my supervisors, Prof. Francisco Collado Rodríguez and Dr. Sonia Baelo Allué, who have walked hand in hand with me over the last four years, helping me progress both academically and personally. Without their continued guidance, support, and encouragement this dissertation would not have been possible. I also wish to thank all the people working for the Department of English and German of the University of Zaragoza, and specially the members of the research teams "Trauma, Culture and Posthumanity: The Definition of Being in Contemporary North-American Fiction" (FFI2015-63506-P) and "Contemporary Narrative in English" (H03_17R). They have all made me feel at home from the very first day. I would particularly like to thank Dr. Silvia Martínez Falquina, who introduced me to, and infused me with her enthusiasm for, North-American literature. I would also like to thank Dr. María Ferrández San Miguel and Dr. Pablo Gómez Muñoz for their continued help and encouragement over the last years. I could not have wished for two better role models to look up to. It has also been a pleasure and a source of inspiration to work alongside Esther Muñoz González.

Special thanks are also due to Prof. Sherryl Vint and Prof. Philip Coleman, who welcomed and cared for me during my research stays at the University of California, Riverside and Trinity College, Dublin. My work has greatly benefited from their insightful comments. During my stay at UCR, I also received generous support and encouragement from Dr. Rocío Carrasco Carrasco, who became not just my colleague but also my family abroad. I would also like to express my gratitude to the organizers and participants of the Heidelberg Spring Academy 2019 for their invaluable comments and feedback on my work. This kind of experiences make all the hours spent in self-imposed isolation worth it.

Last but not least, my deepest heartfelt appreciation goes to my friend and flatmate Alba, for putting a smile on my face every single day of the first two years of my PhD. To Lorena, for the beautiful cover design and her interest in learning about my work. To

Sabela, for being there in the good and the bad times. To my aunt, María José, for all her love and support. And of course, to my parents, Carlos and María del Mar. I have no words to express how caring and supportive they have been not just over the last four years, but also for as long as I can remember. The accomplishment is as much theirs as it is mine.

1. Introduction and Critical Frameworks

The ending scene of the British series *Years and Years* (2019) features Edith, one of the Lyons siblings, laying on a gurney with some cables attached to the back of her head. It is the year 2034 and, being about to die after having been exposed to radiation during a brief nuclear war between the US and China, Edith has decided to have her memories and consciousness downloaded into computational software. With this operation, to which the advocates of transhumanism refer using the term 'mind uploading,' she hopes to escape death and to be able to live forever. Although the professionals working for the Japanese technology company in charge of the procedure do not guarantee it will work, Edith is confident that it will, and expresses her wish to see what happens in the next thousand years. Nevertheless, some seconds before her physical death she seems to change her mind, as she tells Dr. Moss and her assistant Riku Tanaka that all the memories they have stored do not define who she is as a person. Thus, she declares not to be "a piece of code" or "information," and she claims her memories to be more than just facts. She seems to have realized that ultimately love is what gives meaning to these memories and that it is something that cannot be translated into computational code: "All these memories, they're not just facts, they're so much more than that. They're my family. And my lover. They're my mum, and my brother who died years ago. They're love. That's what I'm becoming now. Love. I am love" ("Episode 6" 00:55:17-00:56:03).

This final scene testifies to both the desire and aversion that transhumanism, a philosophical movement that aims to overcome human limitations through the use of science and technology, inspires in the population. As new scientific and technological developments are introduced in contemporary society, some sectors of the population are increasingly seduced by the possibilities these technologies offer to transcend our biological boundaries. Yet, other sectors of the population remain more critical and express their fear that these technologies will somehow rob us of an essential part of our humanity. It is from a realization of the crossroads at which human beings stand in the twenty-first century that this project arises. This introductory chapter provides, first, an introduction to the optimistic transhumanist philosophy and to the more balanced and contrastive perspective of critical posthumanism. These are the two main critical frameworks used in this dissertation to analyze the novels that form the corpus of analysis.

This chapter then explores how the concepts of the post- and the transhuman have been addressed in contemporary culture, art, and literature. The emphasis is laid, nevertheless, on how over the last few decades, writers of fiction have engaged with the topic of the technological augmentation and improvement of the human condition. Lastly, this chapter explains the motivations for the choice of the corpus of analysis, outlines the main research aims of the dissertation, and explains the methodology used in the different analytical chapters.

1.1. TRANSHUMANISM

When delving into transhumanist philosophy, it is common to come across texts which point to the ambiguous origin of the term 'transhumanism' (Ranisch and Sorgner 9; More "Philosophy" 8; Vita-More "Aesthetics" 25). This difficulty in tracing the origins of the term is mostly due to the fact that different variations of the word transhumanism have been used, for different purposes, at different times in history (Vita-More "Aesthetics" 25). In his contribution to *The Transhumanist Reader*, Max More—one of the main proponents of the transhumanist movement—points out that Italian poet and philosopher Dante Alighieri was the first person to refer to transhumanism. Thus, in his 1312 masterpiece *The Divine Comedy*, he used the word "trashumanar"—whose literal meaning was "to pass beyond the human"—for religious or spiritual purposes (More "Philosophy" 8). In his recent work *Seculosity*, David Zahl further explains that the term trashumanar was used by Dante to refer to the transformation process his main character experiences during his ascension to heaven, when his human flesh is suddenly transformed and he is left to come to terms with a completely new and immortal body (72).[1] Similarly, North-American poet T.S. Eliot used the word "transhumanized" in his 1935 play *The Cocktail Party* to refer to the process of spiritual transformation or "illumination" experienced by one of his characters (More "Philosophy" 8).

Julian Huxley gave a different connotation— more similar in nature to the modern one— to the term (More Philosophy 8). The British evolutionary biologist assigned one of the chapters of his 1957 work *New Bottles for New Wine* the title "Transhumanism." In this work, he expressed his belief that "[t]he human species can, if it wishes, transcend

[1] "Trasumanar significar per verba / non si poria," were the exact words used by Dante, which Henry Francis Cary later translated into English as "[w]ords may not tell of that trans-human change."

itself" and used the term transhumanism to refer to the idea of "man remaining man, but transcending himself, by realizing new possibilities of and for his human nature" (17). According to More, what Huxley failed to do was, nevertheless, to develop his ideas into a philosophical position ("Philosophy" 8). Since then, the meaning of the term transhumanism has been subject to further change. While Huxley conceived transhumanism as a means of building a more advantageous social environment and advancing human spiritual development, it eventually came to be associated to the idea of using technology to transgress human's biological limitations (Ranisch and Sorgner 10).

Therefore, although the word transhumanism had been previously used by Dante, Eliot, and Huxley, it was More who, in his 1990 essay "Transhumanism: Toward a Futurist Philosophy," coined the modern sense of the term and the name of the current philosophy (More "True" 137; Ranisch and Sorgner 11). In that essay, he defined transhumanism as a philosophy of life that seeks "the continuation and acceleration of the evolution of intelligent life beyond its currently human form and human limitations by means of science and technology, guided by life-promoting principles and values" (qtd. in "Philosophy" 3).[2] Since the publication of More's influential essay, and seemingly keeping up with the pace of scientific and technological change, transhumanist philosophy has become much more deeply rooted in contemporary society. In their work, Robert Ranisch and Stefan Lorenz Sorgner point to the technological developments of the 1980s, the growing importance of science fiction (SF) in mainstream culture, and the development of the internet as three key factors in the advance of transhumanism. Furthermore, these critics argue that, in the last decade of the twentieth century, some transhumanist institutions and local associations were founded and contributed to the propagation of transhumanist ideas. Thus, the World Transhumanist Association (WTA), the Extropy Institute, the Machine Intelligence Research Institute (also known as the Singularity Institute), the Beyond Humanism Network, or the Foresight Institute, are all institutions that have helped popularize transhumanist ideas (12).

[2] A decade later, in his 2011 essay "True Transhumanism: A Reply to Don Ihde," More provided an updated definition of transhumanism as "a reason-based philosophy and a cultural movement that affirms the possibility and desirability of fundamentally improving the human condition by means of science and technology" (137).

Even if transhumanist institutions and transhumanist thinkers may slightly differ in their politics, they all share a firm belief in the potential of technology to enhance the human condition and improve human life (Mehlman 24; Ranisch and Sorgner 13). Hence, they regard humanity as a work in progress and believe that one day human beings will become posthuman thanks to the use of science and technology (Bostrom "Transhumanist" 4; Ferrando 27; Nayar 17).[3] As Swedish philosopher Nick Bostrom—founder in 1998, together with David Pearce, of the World Transhumanist Association—puts it in his work "Transhumanist Values":

> Transhumanists view human nature as a work-in-progress, a half-baked beginning that we can learn to remold in desirable ways. Current humanity need not be the endpoint of evolution. Transhumanists hope that by responsible use of science, technology, and other rational means we shall eventually manage to become posthuman, beings with vastly greater capacities than present human beings have. (4)

For transhumanist critics and thinkers, the posthuman is, thus, the next stage in the evolution process, and human beings in their current form nothing but a "transitional stage standing between our animal heritage and our posthuman future" (More "Extropian"), "an intermediate stage before the arrival of the advanced human form in which bodies and their intelligence might be enhanced for greater utility and purpose" (Nayar 17). They believe that, in time, science and technology will allow us to rebuild our bodies and minds and become "persons of unprecedented physical, intellectual, and psychological capacity, self-programming, potentially immortal, unlimited individuals" (More "Extropian").

According to More, transhumanist philosophy does not inherently endorse any specific technologies. However, he does acknowledge that there are some technologies and areas of present and future technological development which are particularly pertinent to transhumanist goals. In particular,

> information technology, computer science and engineering, cognitive science and the neurosciences, neural-computer interface research, materials science, artificial intelligence, the array of sciences and technologies involved in regenerative medicine and life extension, genetic engineering, and nanotechnology. ("Philosophy" 4-5)

---

[3] However, Ranisch and Sorgner claim that the motif of the 'post-' or the 'trans-human' has become, in recent times, less frequently used in transhumanist circles. Good proof of this tendency is the fact that, in 2008, the WTA changed its name to 'Humanity+.' Nevertheless, according to these critics, "[r]egardless of the labeling, in current discourses the aspiration stays the same" (13).

With the help of these technologies, transhumanists hope to realize their long-held enhancement dreams. On the one hand, they aim to increase human beings' limited cognitive and emotional functions. This includes, but is not restricted to, creating beings of greater intellectual capacity, memory, attention, and creativity, as well as eliminating any unnecessary suffering, increasing human happiness levels, and building a more emotionally sensitive, tolerant, and respectful population. Among the technologies that have been proposed to achieve these goals we find mood-enhancement drugs, brain-computer interface technology, and germline genetic engineering. Some of these technologies are already familiar to the population. Good proof of this is the ever more standardized use of nootropics, colloquially known as smart drugs. Nootropics are compounds designed to enhance the cognitive functions of healthy individuals (Frati et. al 5). In recent times, they have become increasingly popular among the student community. In this respect, in an article written for *The Telegraph*, British journalist Graeme Paton claims that one in four students at leading universities in the UK is likely to have experimented with the illicit drug Modafinil, a drug originally devised to treat narcolepsy. This medicine, which can be purchased online, allows undergraduates to stay awake for longer periods of time and improve their performance in the days prior to the exams (Paton).

On the other hand, transhumanists aim to create physically stronger human beings who are free of disease—both inherited and acquired—and live longer and healthier lives. In this last respect, Bostrom points out that aging is the major cause of death in the developed countries—or, to use his own words, "the number one killer"—and the principal cause of dementia, disability, and illness. This critic then declares that one of the goals of transhumanism is to halt or reverse the aging process and extend the human health-span, that is, the healthy and functional period of one's life ("Transhumanist" 13). Nanomedicine, in both its present-day and future applications—namely tissue engineering, nanosurgery, targeted drug delivery, somatic gene therapy, germline genetic engineering, etc. (Ebbesen and Jensen 1-2)—features as the leading technology that may, in the not too-distant future, help human beings live longer and healthier lives. Some biotechnology companies such as Calico, Google's biotech spin-off, are already working towards this goal. Founded in 2013 and based in the San Francisco Bay Area, the company aims to develop technology to fight aging and age-related diseases. Since its foundation, Calico has established partnerships with important institutions such as the

Broad Institute of MIT and Harvard, the University of Texas Southwestern Medical Center, the California Institute for Quantitative Biosciences (QB3), and the biopharmaceutical company AbbVie.

Some transhumanist critics even go one step further and point to the potential that technology offers for achieving human immortality. In this respect, the combination of the cryopreservation and storage of human bodies and their eventual resurrection through advanced nanotechnology seems to be the winning bet. The emergence of different cryonics companies in different parts of the globe testifies to this desire of a sector of the population to put technology at the service of overcoming death. Alcor Life Extension Foundation, for example, is a cryonics company that is based in the US and offers citizens the possibility to have either their whole bodies or just their brains cryopreserved and stored in its facilities—albeit with no guarantees. The company counts now with over a thousand clients and, to this date, over a hundred people have undergone cryonics procedures in its premises ("Alcor"). However, as hinted at above, a few transhumanist critics envisage the yet more inconceivable scenario of human beings achieving immortality through transferring their consciousness into computational software, a process they refer to as 'mind uploading.' Some of these enhancement options—specifically, the use of information and communication technologies to enhance human physical and intellectual capabilities, the biotechnological pursuit of happiness, and the search for immortality through cryonics—will be discussed in greater depth in the chapters to come.

Overall, transhumanism is not just a critical discourse but also a set of beliefs that spreads across different disciplines—philosophy, sociology, medicine, biotechnology, etc.—and that is gaining strength in contemporary society. Remarkably, in recent times transhumanist philosophy has even become well known within the political sphere, mainly through the activism of Zoltan Istvan, a transhumanist philosopher, writer, and politician who founded, in 2014, the US Transhumanist Party. Istvan run for President of the United States as a third-party candidate in the 2016 election, helping publicize his campaign by driving a coffin-shaped bus across the country. The bus was called the Immortality Bus and it meant to raise awareness of life extension. For the 2020 presidential election, Istvan changed his strategy and decided to run as a candidate for the Republican Party. Under the motto "Upgrading America," he launched an electoral campaign that revolved around three major policy proposals. Firstly, Istvan committed

himself to monetizing America's unused natural resources in order to provide every citizen of the United States with a monthly income of one thousand dollars. Secondly, at the threat of begin culturally, politically, and economically surpassed by China, Istvan committed himself to saving "America's moral, democratic, and entrepreneurial leadership in the world." One way of doing this was by winning the AI, neural prosthetics, and genetic editing arms races. Most importantly, against the left's "politically correct culture devoid of risk and objectivity," Istvan promised to embrace transhumanism and radical technological innovation, and make the Republican party "the caretakers of humanity's brave future" ("Policies"). Although the transhumanist politician did not gain enough votes, he did manage to draw the attention of the media and, consequently, to foster public debate on transhumanism (see, e.g., Cuthbertson).

Ultimately, the emphasis on pushing beyond our human limitations and perfecting the human condition is what links the transhumanist movement to humanism. Feminist philosopher Rosi Braidotti describes humanism as a doctrine broadly based on eighteenth and nineteenth-century interpretations of classical and Italian Renaissance standards and characterized by an unprecedented "[f]aith in the unique, self-regulating and intrinsically moral powers of human reason" (*Posthuman* 13). Braidotti then argues that the Humanist belief that the human species can progress and perfect itself through "a self-regulatory and teleological ordained use of reason and of secular scientific rationality" is one of the fundamental premises of the Enlightenment (37). Thus, transhumanism is often regarded—even by transhumanist philosophers—as an extension or an outgrowth of humanism and the Enlightenment, and as a movement that has its roots in humanism but, at the same time, transcends it (Bostrom "In Defense" 55; Tirosh-Samuelson 35; Mahon 6). As happens with humanism, transhumanism places the emphasis on reason and humanity and stresses the possibility of human beings controlling their own destinies, but it goes one step further, as it encourages them to "push beyond the merely human stage of evolution" (More "Extropian"). Furthermore, while humanism aimed to improve human nature through traditional means, such as education and cultural refinement, transhumanism aims to transcend any biological and genetic limits by means of technology (More "Transhumanist" 4; Bostrom "Transhumanist" 4).

The problem with the Humanist doctrine is, according to Braidotti, that its basic tenets are highly influenced by the classical ideal of "Man" as "the measure of all things," which was first formulated by Protagoras and then adopted as a universal model during

the Italian Renaissance (*Posthuman* 13). Drawing on feminist critic Luce Irigaray's ideas, Braidotti argues that this classical ideal of "Man" is not abstract but rather coincides with the figure of a white, European, handsome, able-bodied, and heterosexual male (24). Thus, all the human beings who do not fall into these categories are relegated to the category of the "others" of the Humanistic man. According to Braidotti, this Humanist tendency to define negatively otherness in terms of difference reduces the sexualized, racialized, and naturalized others into "the less than human status of disposable bodies," and has historically served to justify their exclusion and oppression (15). As Braidotti sharply points out, the Humanist doctrine was radically questioned in the years following the Second World War. In this respect, she points to the key role played by feminism, de-colonization, anti-racism, and other anti-humanist social movements that emerged in the 1960s and 1970s (16). Nevertheless, some of its main tenets still reverberate today, and transhumanist philosophy, with its emphasis on the progress of humankind through science and technology and its lack of concern for issues of gender, race, and class, risks repeating some of the ideological positions for which humanism has been blamed.

Lastly, it is worth mentioning that in spite of firmly believing in the possibility of human beings eventually becoming posthuman by means of a responsible use of science and technology, some transhumanist philosophers warn us of the potential risks that a misuse of human enhancement technologies may entail. Thus, Bostrom argues that "while future technological capabilities carry immense potential for beneficial deployments, they also could be misused to cause enormous harm, ranging all the way to the extreme possibility of intelligent life becoming extinct." Other possible adverse consequences include "widening social inequalities or a gradual erosion of . . . meaningful human relationships and ecological diversity." All these are risks, according to the philosopher, that "must be taken very seriously" ("Transhumanist" 4). Nevertheless, transhumanism is an inherently optimistic movement that tends to overlook the potential hazards that certain enhancement technologies could pose. Good proof of this is the fact that Bostrom uses the term "bioconservative" to refer to those critics who warn against the dehumanizing effects of unrestrained scientific and technological progress. According to Bostrom, what critics such as Francis Fukuyama, Leon Kass, Jeremy Rifkin, or Bill McKibben share is a fear that advanced technologies may "undermine our human dignity or inadvertently erode something that is deeply valuable about being human, but that is difficult to put into words or to factor into a cost-benefit analysis" ("In Defense" 56).

Similarly, in his 2001 article "Rage Against the Machines: Witnessing the Birth of the Neo-Luddite Movement," North-American science writer Ronald Bailey used the term "neo-Luddite" to refer to those critics and thinkers who repudiate "a globally integrated, 'corporatized' economy based on high technology" and urge governments to ban some specific technologies.

1.2. CRITICAL POSTHUMANISM

A critical framework that coexists with—and stands, in many ways, in opposition to—the optimistic transhumanist philosophy is critical posthumanism. Because there is theoretical confusion among critics and the terms transhumanism and critical posthumanism are often (erroneously) used interchangeably, it is worth outlining the main discrepancies between the two frameworks. To begin with, transhumanism is, as noted earlier, a set of beliefs that spreads across many different disciplines: philosophy, sociology, politics, medicine, biotechnology... By contrast, critical posthumanism is a theoretical framework that has become increasingly used by scholars from the humanities to analyze and reflect on the challenges human beings face in the age of the Anthropocene.[4] Secondly, the term 'posthuman' has, for transhumanists and critical posthumanists, a different connotation. While for transhumanist critics the posthuman represents, as explained above, the next stage in the evolution process, according to critical posthumanists human beings are already posthuman. As Peter Mahon states in his 2017 work *Posthumanism: A Guide for the Perplexed*: "[W]e are, like it or not, already quite far down the road of posthumanism, so we don't really have a 'choice' about whether or not we should become posthuman. We are already posthumans living in a posthuman world" (18). The use of the past tense in the title of N. Katherine Hayles's *How We Became Posthuman* (1999)—one of the works that helped consolidate the posthuman paradigm—is also revelatory in this respect.

[4] The term 'Anthropocene' was coined in 2002 by chemist and Nobel Prize-winner Paul J. Crutzen to refer to the period that comes after the Holocene, a period characterized by an unprecedented degree of human influence on the environment (Crutzen 23; Parikka 51). Since then, it has become a key term within the field of critical posthumanism. Two of the critics who have most prominently analyzed this concept in relation to theories of the posthuman are Donna Haraway and Rosi Braidotti (see Haraway "Anthropocene"; Braidotti *Posthuman*).

In her seminal work, Hayles sets out to provide an answer to the question of how human beings became posthuman. As she argues, the posthuman condition had its origins in the Macy Conferences on Cybernetics, a series of annual conferences that took place from 1943 to 195, bringing together well-known researchers of the time, such as Norbert Wiener, John von Neumann, Claude Shannon, and Warren McCulloch. What emerged from these meetings was a new theoretical model of communication and control that applied equally to animals, humans, and machines (*How We Became* 7). Of crucial importance is the fact that, under the cybernetic paradigm, information came to be regarded as an entity separate from the material substrates in which it was embedded, as a "kind of bodiless fluid" which could circulate among different material substrates without losing its meaning nor its form (xi). The separation between information and materiality enforced by developments in cybernetics allowed, according to Hayles, the creation of a hierarchy according to which information was assigned a central role and materiality run "a distant second" (12).

The result of this was, as Hayles claims, "a new way of looking at human beings" (*How We Became* 7). Thus, human consciousness started to be regarded as data, code, informational pattern, and its embodiment, the body, as "an accident of evolution" we were now in a position to correct (12). This (posthuman) view of identity allowed, in turn, for a perception of human beings as "information-processing entities," similar in essence to intelligent machines.[5] Even if Wiener's intention was not to subvert liberal humanism but to extend it—he was not interested in regarding human beings as machines but in showing that computational machines could function like human beings—his cybernetic perspective did undermine the liberal humanist concept of subjectivity that had prevailed since the Enlightenment (7). Human beings were no longer regarded as having agency, will, and desire of their own but as material-informational entities whose boundaries were subjected to a constant process of (re)construction. According to this perspective, knowledge emerged from a series of informational feedback loops between the human mind, its technological prosthesis, and the environment. To refer to this new conception

[5] Remarkably, the heyday of cybernetic and information theories coincides in time with the discovery of the genetic material of DNA, in 1944, by Oswald Avery, Maclyn McCarty, and Colin MacLeod, as well as of its molecular structure, in 1953, by James Watson and Francis Crick. Both discoveries contributed to the reification of the view of the human being as a set of informational patterns.

of knowledge, Hayles borrowed the term "distributed cognition" from North-American cognitive scientist Edwin Hutchins (3).

According to Hayles, the problem with the dismantling of the liberal humanist subject carried out under the cybernetic model was precisely that it understood the human being as "a set of informational processes" and left embodiment out of the equation (*How We Became* 4). Because it reinscribed traditional humanist ideas and assumptions—more specifically, the Cartesian mind/body dualism, which had traditionally been used to justify the oppression and subjugation of certain sectors of the population—the cybernetic version of the posthuman was regarded by this critic as a continuation rather than a break with the liberal tradition (5-6). Nevertheless, for Hayles, that particular cultural moment, with its ongoing dismantling of the liberal humanist subject, showed an enormous potential to "put back into the picture the flesh" that had been erased under both the humanist and the informational paradigms, and envision instead an embodied posthuman subjectivity. In the following often-quoted passage, she sketched out her vision of the posthuman as an embodied being:

> If my nightmare is a culture inhabited by posthumans who regard their bodies as fashion accessories rather than the ground of being, my dream is a version of the posthuman that embraces the possibilities of information technologies without being seduced by fantasies of unlimited power and disembodied immortality, that recognizes and celebrates finitude as a condition of human being, and that understands human life is embedded in a material world of great complexity, one on which we depend for our continued survival. (5)

The need "to remind information of its forgotten or repressed materiality" would become, according to Stefan Herbrechter, a key concern of critical posthumanism (94; see also Vint 43). Thus, while this critical framework acknowledges "the potential of posthuman technologies of the self," it also points to the need to be cautious of "the temptation of radical dematerialization, disembodiment and dehumanization" (Herbrechter 95). Against the universalist inclinations of liberal humanism and transhumanist techno-utopian fantasies of disembodiment, critical posthumanism defends "a material anchoring of humanity in embodiment" and regards the posthuman as an opportunity to prevent disembodiment from being continually reinscribed within the prevailing notion of subjectivity (Herbrechter 95-96).

Hayles's passage points not only to the impossibility to separate human mind and body but also to the important role played by the environment in the construction of (her

own version of) posthuman subjectivity. In this last respect, according to this critic no longer are human beings perceived as self-contained entities who have the right to dominate and control nature at their own wishes. Instead, their survival depends on their working in partnership with the nonhuman entities with which they share the planet (*How We Became* 289). Ultimately, critical posthumanism also aims to transcend the anthropocentrism prevalent in liberal humanism. To use Francesca Ferrando's words, it aims to decenter "the human from the primary focus of the discourse" (32)—and to develop alternative (and more ethical) forms of social connection or kinship with both non-human animals and other non-human agents, that is, "animals, plants, cells, bacteria and the Earth as a whole" (Braidotti "Posthuman" 200). In her 2013 work *The Posthuman*, which has become a landmark study in the field of critical posthumanism, Braidotti advocates the need for a posthuman ethics that may transcend the self-centered individualism typical of classical humanism. In its place, she proposes "an enlarged sense of inter-connection between self and others, including the non-human or 'earth' others." For Braidotti, the new critical posthuman subject becomes "a relational subject constituted in and by multiplicity" (49). In her 2019 work *Posthuman Knowledge*, Braidotti further elaborates on this issue and sets out to analyze the positive potential of the convergence of posthumanist and post-anthropocentric approaches. Although she concedes that this "posthuman convergence" is not devoid of risks, she ultimately argues that it signals "a rich and complex historical transition," as it offers great opportunities "for both humans and non-human agents, as well as for the Humanities, to reinvent themselves" (4). Specifically, the framework for posthuman knowledge Braidotti adopts involves repositioning animals, plants, and technology, as well as terrestrial, planetary, and cosmic concerns as "serious agents and co-constructors in processes of transversal thinking and knowing" (102).

Overall, the critical posthumanist view of the posthuman condition as the inevitable (but potentially liberating) consequence of the development of cybernetic and information theories in the 1940s and 1950s contrasts greatly with the transhumanist view of human beings as entities in constant evolution towards a superior, posthuman stage of evolution. As mentioned above, because it is mostly concerned with human improvement and still places human beings at a privileged position in the order of things, transhumanism is often regarded as an extension of humanism. Thus, in the introduction to his work *What is Posthumanism?* Cary Wolfe refers to transhumanism as "an

intensification of humanism" (xv). For her part, Ferrando claims that "by taking humanism further, transhumanism can be defined as 'ultra-humanism'" (27). By contrast, critical posthumanism does successfully destabilize the main tenets of liberal humanism. Even if earlier versions of the posthuman still reinscribed, as hinted at above, some traditional humanist ideas, the more encompassing version of the posthuman developed by Hayles and other critical posthumanists (i.e., Haraway, Braidotti, Vint, Herbrechter, and Ferrando) does carry out an effective deconstruction of the liberal humanist subject. Furthermore, it manages to transcend the anthropocentrism prevalent in liberal humanism.

There is consensus among critical posthumanists that those versions of the posthuman that reinscribe, rather than dismantle, liberal humanist values are misguided and, therefore, undesirable. Thus, Hayles claims that "[w]hat is lethal is not the posthuman as such but the grafting of the posthuman onto a liberal humanist view of the self" (*How We Became* 286-87). Nevertheless, she argues that now is the appropriate moment to decide what the posthuman means and expresses her conviction that human beings can indeed construct some versions of the posthuman that will lead to our long-term survival, as well as to the survival of the organic and non-organic life forms with which we share the planet (291). In this respect, Herbrechter argues that one of the tasks of critical posthumanism is precisely to engage in a process of persistent deconstruction that prevents liberal humanist values from reinscribing themselves in "new forms within posthumanist and, in particular, transhumanist discourses" (44). Similarly, Ferrando points out that transhumanism has its roots in "traditions of thought which pose unredeemable restrictions to its perspectives," namely humanism, and suggests that the more encompassing perspective of posthumanism may enrich the debate and provide "a more suitable point of departure" (29). As will be explained later on in more detail, one of the main aims of this dissertation is precisely to explore how some writers in their twenty-first century fiction denounce, from a critical posthumanist perspective, the limitations of the version of the posthuman envisaged by some transhumanist critics.

1.3. THE POST- AND THE TRANSHUMAN IN CONTEMPORARY CULTURE, ART, AND LITERATURE

The above-mentioned debates around the post- and the transhuman have not only come to predate the works of scientists and humanists but also found their reflection in

contemporary cultural, artistic, and literary production. Thus, in the last four decades, a good number of artists, musicians, writers, and filmmakers have set out to explore what it means to be human in an age of radical technological change. In his contribution to the edited volume *Posthumanism: The Future of Homo Sapiens* (2018), expert in technology and culture Kevin LaGrandeur points to the important role played by art in anticipating, incorporating, and reflecting on the upsides and downsides of major cultural changes. As he puts it: "[D]uring times of great cultural shifts, art is often the first to use and reflect any newer cultural elements; to question them, celebrate them, or play with them; or to critique them." According to this critic, this proves to be true with the idea of the posthuman, an idea that threats to transform substantially the way human beings think about ourselves, about the world that surrounds us, and about our relationship to the universe. Hence, in recent times artists have started to use and play with posthuman ideas, producing art that reflects and anticipates our struggles to make sense of this new condition. Although in his chapter LaGrandeur focuses mainly on visual art, he claims this to be true of all the arts: written, visual, musical, etc. (377).

According to LaGrandeur, some artists have found particularly compelling certain aspects of the posthuman paradigm. Firstly, the idea that human beings are no longer regarded as independent entities but as distributed networks, composed not only of the organic elements that conform their brains and bodies but also of the organic and inorganic elements which surround them and on which they depend for their survival. Secondly, the idea that human consciousness is constituted by a series of informational patterns, while the body becomes an interchangeable, expandable, and even disposable substrate for information, "*a prosthesis* . . . of the information-producing brain" (378; emphasis in the original). Thirdly, the possibility of enhancing our prosthetic bodies through technology, with the ultimate aim of transcending our organic limitations and becoming beings of unprecedented capabilities.

In the visual arts, this interest on posthuman ideas has manifested in the emergence of different tendencies. On the one hand, some artists have set out to create art that *enacts* the posthuman. This is the case, for instance, of "cyborg art," a kind of art in which the artist works in partnership with an intelligent machine that has agency of its own and acts as "an intelligent extension of the artist, as a smart prosthesis" (LaGrandeur 379). North-American artists Siebren Versteeg and Ian Cheng have both produced works that belong to this trend. Remarkably, their cyborg artworks have been recently exhibited in well-

known institutions such as the Museum of Modern Art (MoMa) in New York or the Museum of Contemporary Art in Chicago. On the other hand, other artists have made art that *comments on* the posthuman. This is the case of "biotechnological art," a kind of art that is mainly concerned with the technological modification of living organisms (382). Embracing the possibilities that technology opens up for human beings, North-American transhumanist designer Natasha Vita-More has designed a multi-media model of an idealized future posthuman body. Her design, which she has titled "Primo Posthuman: A Product of Ageless 2030," consists of a 3-D mannequin-like model of a human body and a series of captions pointing to different parts of that body and explaining how they could be technologically modified.

Some artists have even gone one step further and set out to modify their own bodies, turning themselves into cyborgs. A prominent cyborg artist is Cyprus-born, Australian-raised Stelarc, who temporarily attached a robotic arm and a cell-cultivated ear to his body. According to LaGrandeur, the main aim behind Stelarc's transformation was to investigate "not only conceptually but also intimately and experientially" the transformation that human beings are currently experimenting under the posthuman paradigm (385). Thus, human beings are increasingly extending themselves into their environment and their technological artifacts, and, consequently, transforming themselves into cyborgs. Another artist who has turned his body into an artwork by adding technological prosthesis to it is British-Spanish artist Neil Harbisson—in his case, the modification is permanent rather than temporary. Harbisson, who was born with achromatopsia or total color blindness, has been the first person to have an 'eyeborg' implanted into his skull. This pioneering device consists of an antenna "that curves up and over from the back of his skull" and "is connected to a chip that translates color into sound." Although it was initially devised to mitigate the effects of his disability, the eyeborg also makes it possible for Harbisson to perceive colors "beyond the normal human spectrum," such as infrared or ultraviolet (Jeffries). What he does then is to use this information to create his artworks.

Similarly, in his contribution to the volume *Post- and Transhumanism: An Introduction*, Andy Miah uses the term "bioart" to refer to this kind of art, which draws from both post- and transhumanist thought, explores biological boundaries, and often involves the scientific or technological manipulation of biological matter (229). Nevertheless, this critic also points out that bioart does not necessarily involve the

modification of organic matter, as artists may also encourage critical reflection on the transgression of biological boundaries by situating themselves physically within the artwork. Thus, in her work *Falling Asleep with a Pig* (2009), British performance artist Kira O'Reilly cohabited with a pig for several days in order to make the audience reconsider their relationship to non-human animals, "a prominent theme within posthumanist literature and an increasingly pertinent biotechnological theme as pig organs are used increasingly to help humans survive" (Miah 231). Overall, Miah concludes that bioart "aligns with transhumanism" in its transgression of biological boundaries, which may involve experimenting with new scientific techniques, such as genetic engineering or stem cell therapy. However, it also engages with posthumanist questions, such as "humanity's presumed omnipotence within the natural order" and directs attention towards the ethical and philosophical questions that are often overlooked when pursuing scientific research (238).

The new posthuman paradigm has not only captivated visual and performance artists but also drawn the attention of some musicians. Italian-born astrophysicist and musician Fionella Terenzi has, for instance, become well-known for "capturing the strange, spooky symphony of the cosmos." What Terenzi does is to record radio waves emanating from far-away galaxies and process them, making use of computer music software, into music. Her first album, entitled "Music from the Galaxies," came out in 1991. As well as having an intrinsic aesthetic value, "acoustic astronomy" may prove to have many different useful practical applications. Thus, it can help trace "changes in a star's intensity or fluctuations in its radiation" as well as "irregular areas that aren't uniform in radiation" (Wenz). For his part, North-American musician Daniel Finfer has released a few electro-pop music albums in which he explores the main consequences of accelerating technological development. Finfer draws his inspiration from Ray Kurzweil's concept of the 'Singularity,' which refers to the moment when human existence will be deeply and irreversibly altered by a sudden expansion of technological growth. In songs such as "You in the Future" or "Replacing You," both of which belong to the Album "To Build a Fire" (2009), Finfer combines elements from both electronic and pop music to explore questions such as the possibility of "post-singularity robots dismissing the need for humans" (Saenz).

Another sector in which the posthuman paradigm shift has had its reflection is the audiovisual. Thus, the last four decades have witnessed a proliferation of films, TV series,

and videogames dealing with post- and transhumanist topics. In their introduction to *The Palgrave Handbook of Posthumanism in Film and Television* (2015), Michael Hauskeller, Thomas D. Philbeck, and Curtis D. Carbonell claim that "the medium of moving pictures" may be particularly well-equipped to deal with the transformation that the human is experiencing under the posthuman paradigm (3-4). By means of translating abstract concepts into concrete visual representations or living pictures, screened representations make these concepts immediate "in a way that an abstract and thus dead (or more precisely not-yet living) concept could never be." In fact, it is in audiovisual media—and perhaps more prominently in SF films—that we are more likely to find the image of the human literally transformed into images of the posthuman. According to these critics, this kind of films allow us to play with our possible future selves, while also encouraging us to adopt a critical position (4).

Experts on visual culture agree that there has been a change in the way SF engages with and represents the figure of the posthuman. Thus, Hauskeller, Philbeck, and Carbonell argue that in the last two decades of the twentieth century, the introduction and standardization of some technological developments such as nuclear power, robotic manufacturing, and the personal computer propitiated the appearance of SF films that warned against the possibility of technology eventually undermining, overpowering, or even destroying human beings (4-5). According to these critics, films such as *War Games* (John Badham, 1983), *RoboCop* (Paul Verhoeven, 1987), or *The Terminator* (James Cameron, 1984) framed technology "as a false friend, something of which to be wary" (5). Other late-twentieth century SF films with similar approaches to technology are *Blade Runner* (Ridley Scott, 1982)—that is based on Philip K. Dick's novel *Do Androids Dream of Electric Sheep?* (1968)—*Ghost in the Shell* (Mamoru Oshii, 1995)—based on a manga series by Japanese manga artist Masamune Shirow—*Johnny Mnemonic* (Robert Longo, 1995)—based on Willian Gibson's dystopic short story of the same name—or *The Matrix Trilogy* (the Wachowski siblings, 1999-2003). However, in recent times, a growing number of filmmakers have turned their attention to the opportunities that a "thoroughly technologized world might bring" (Hauskeller et al. 5. Thus, while in early SF films posthuman characters used to be presented as monsters or villains, they are increasingly presented as fantasy figures or heroes in contemporary SF films such as *X-Men* (Bryan Singer, 2000) or *Ironman* (Jon Favreau, 2008). This does not mean, however, that filmmakers do not show reservations about the growing technologization and

posthumanisation of contemporary life anymore. In fact, both "[t]he fear and wonder of the posthumanist turn" pervade contemporary SF films, which increasingly try to comprehend a future that was once just hypothetical but now "looms over our fragmented but reified identities" (Hauskeller et al. 5).

Anneke Smelik, for her part, also points to a change in the way SF cinema engages with the image of the posthuman. In her contribution to the volume *The Cambridge Companion to the Posthuman* (2017), she describes the cinematic cyborg as the quintessential posthuman figure, as a hybrid figure that results of the combination of "a human being and something nonhuman," be it a machine, some kind of digital technology, a plant, an animal, a monster, or an alien (109-113). According to Smelik, by blurring the boundary between human and nonhuman, the posthuman cyborg "transforms and deconstructs human subjectivity in a postanthropocentric culture" (110). This often results in an identity crisis that affects the cyborg itself, but also the spectator. For Smelik, the above-mentioned change has to do precisely with the way SF films deal with posthuman identity crises. In SF films of the 1980s and 1990s such as *Blade Runner* (Ridley Scott, 1982), *RoboCop* (Paul Verhoeven, 1987), or *Total Recall* (Paul Verhoeven, 1990), identity crises were often motivated by the technological implantation or erasure of memories. Being able to recall experiences they had not lived through or to remember partial memories that had been removed from them, the characters of these films often felt disoriented. Nevertheless, as Smelik points out, the technologies of memory have undergone a transformation in contemporary cinema. Specifically, the focus has "shifted away from implanted or prosthetic memory to other, now digital media." This shift also involves, according to Smelik, a transition from the "hardware cyborg" to the "software cyborg," a hybrid figure that results of the interaction of a human body with digital technology. Most importantly, the change in the treatment of the posthuman cyborg's identity crisis has been accompanied by a change in the aesthetics of these films. As Smelik puts it: "The post-apocalyptic landscapes of catastrophe and devastation of the 1980s and 1990s have given way to translucent plastic, glass, liquid, or virtual settings in which humans happily—or sometimes not so happily—interact with the often invisible machines that surround them" (114). Contemporary films such as *Her* (Spike Jonze, 2013), *Transcendence* (Wally Pfister, 2014), or *Ex Machina* (Alex Garland, 2015) are representative of this new way of portraying human-nonhuman interactions.

Nevertheless, if there is one field which has been particularly prolific in its contributions to our understanding of the present condition of being, it is creative literature and, perhaps most prominently, SF. In their contribution to the volume *The Cambridge Companion to the Posthuman* (2017), Lisa Yaszek and Jason W. Ellis point out that it was not until the late twentieth century that debates on the notion of posthumanity became widespread. However, over two centuries earlier, some SF writers had already published stories about technologically enhanced humans. According to these critics, up to World War II, SF writers engaged mainly with Enlightenment ideas on unlimited human perfectibility. The novels produced during this period, of which Mary Shelley's *Frankenstein* (1818) is perhaps most representative, were often critical of the idea of using science and technology to create a new and superior species. In the second half of the twentieth century, the developments in the cognitive and computational sciences directed SF writers' attention to the "mutability and multiplicity" to which the organic human body was subjected under the new posthuman paradigm (71). Keeping up with the fast pace of scientific and technological development, this literary genre continued to grow steadily, making its way into the twenty-first century and giving rise along the way to a wide variety of subgenres. From the mutational romance, to New Wave SF, to cyberpunk, to post-cyberpunk, many are the shapes that literary attempts at trying to make sense of the implications of the transition from human to posthuman have taken in the last few decades.

While many of these attempts have been dystopian in nature—thus, SF writers have often expressed anxieties about the disintegration of the subject under the posthuman paradigm, as will be explained later on in more detail—a significant percentage of SF writers have focused also on the positive aspects of these changes. Specifically, echoeing some of the main tenets of critical posthumanism, they have analyzed the possibilities that the posthuman paradigm opens up for previously-excluded sectors of the population, as well as for the non-human beings with which we share the planet. In this respect, Yaszek and Ellis point to the existence of a first generation of feminist SF writers who have, from the 1960s onwards, imagined "distinctly posthuman and non patriarchal futures" in which the new reproductive technologies allow women to restructure "the relations of science, society, and sexuality in surprising new ways" (80). Joanna Russ's *The Female Man* (1974) or Marge Piercy's *Woman on the Edge of Time* (1976) are two novels that belong to this category. Similarly, a second generation of feminist SF writers

have explored how "posthuman alliances with the nonhuman" might result in fairer modes of psychological and social organization than those produced by "human-oriented modes of political activism." Cyberpunk writer Pat Cadigan, as well as post-singularity author Kathleen Ann Goonan, and Afrofuturist writer Octavia Butler have all produced works that belong to this trend. Overall, Yaszek and Ellis argue that in spite of their different approaches to the issue of the posthuman, what all SF writers share is "a commitment to issues of ethics and social justice that have long haunted human society and that may be amplified by its posthuman successors" (80).

For critical posthumanists literature stands, precisely, as a powerful tool to explore the potential and limitations of different configurations of the posthuman. Thus, in *How We Became Posthuman*, Hayles points to the interdependence of science and literature. According to her, scientific texts reveal, in ways that literature cannot, the underlying theoretical and practical principles of any particular approach. By contrast, literary texts can reveal the cultural, social, and representational questions associated to theoretical shifts and technological developments, which scientific texts often overlook (24). Then, Hayles argues that speculative fiction may be the most appropriate vehicle for exploring questions related to the posthuman in the wake of the new millennium (247).[6] In a similar vein, Professor of SF Media Studies Sherryl Vint contends that SF is an appropriate space in which to explore the consequences of different versions of the posthuman (20). Its generic conventions, Vint argues, require writers to explore the connections between changes in the physical world, which might involve taking a close look at the new technological developments, and changes in the human beings who inhabit that world

[6] In her 2005 work *Writing with Intent*, Margaret Atwood defined SF as fiction that features events that are unlikely to happen today and that either depend, for example, "on advanced space travel, time travel, the discovery of green monsters on other planets or galaxies," or feature technologies that have still not been invented (92). By contrast, she described speculative fiction as fiction that features events that have already taken place in the past, or are taking place now (perhaps in other countries), or for which the technology has already been developed. More recently, in the introduction to the edited volume *Science Fiction and Speculative Fiction: Challenging Genres* (2013), Paul L. Thomas has pointed to the difficulty in establishing clear-cut boundaries between the two genres. According to this critic, this difficulty lies in the fact that the conventions of SF and speculative fiction are constantly shifting and overlapping (1-9). In turn, in his 2017 article "Speculative Fiction," Marek Oziewicz argues that speculative fiction has increasingly come to be regarded as an umbrella term for different forms of non-mimetic genres—that is, genres that do not try to faithfully represent reality. Thus, fantasy, science fiction, utopia, dystopia, the gothic, zombie, vampire and post-apocalyptic fiction, steampunk, slipstream, or magic realism, are all genres or modes that share the label of speculative fiction.

(19).[7] Thus, in the different chapters of *Bodies of Tomorrow*, Vint sets out to analyze different SF texts, such as Gwyneth Jones's trilogy *White Queen* (1991), *North Wind* (1994) and *Phoenix Café* (1998), Octavia Butler's *Xenogenesis* trilogy, Iain M. Banks's *Consider Phlebas* (1987), *Use of Weapons* (1988) and *The Player of Games* (1990), and William Gibson's *Neuromancer* (1984). According to this critic, what the analysis of these texts seems to suggest is, on the one hand, that some versions of the posthuman presently considered in both fiction and technoscience practice are ethically dangerous. On the other hand, that if we strive to create a version of the posthuman that transcends liberal humanism, "then there exists the more positive model of an embodied posthuman subjectivity" (25).

A version of the posthuman that has proved to be restricted and that may therefore benefit from a literary insight is the one proposed by transhumanist philosophers. In her 2011 article "Wrestling with Transhumanism," Hayles points precisely to the need to broaden transhumanism's limited perspective. According to her, the framework in which transhumanism considers how advanced technologies affect human life and culture is "too narrow and ideologically fraught with individualism and neoliberal philosophy to be fully up to the task." She suggests that human beings should instead take advantage of any available resource to help us think through the changes that enhancement technologies promote, and stresses the important role played by science and speculative fiction in this respect (225). Similarly, Mahon argues that good SF can "act as a sort of 'imaginative lab'" for readers to test the biological and sociocultural influence of present and future scientific and technological developments, helping them to evaluate their possible benefits and/or perils (24). Significantly, even More concedes that many of his transhumanist colleagues hold an overly technocentric vision, especially those working in the computer and information sciences, as well as in the physical sciences. Hence, More mentions Kurzweil as an example of a "sophisticated seer" who lacks, nevertheless, a background in the social sciences, specifically in philosophy, psychology, politics and economics ("True" 145). In order to understand fully the aims and possibilities opened up by transhumanism it is necessary to take an interdisciplinary approach, one that

[7] Similarly, in his latest work, *21 Lessons for the 21st Century*, Israeli historian Yuval Noah Harari points to the capacity of SF to shape how people look at things such as climate change, bioengineering, and artificial intelligence, and suggests that it may be in fact the most relevant genre in the twenty-first century. "We certainly need good science, but from a political perspective, a good science-fiction movie is worth far more than an article in *Science* or *Nature*," Harari declares (251).

integrates the physical and social sciences (More "Philosophy" 5). Although the social sciences can indeed provide us with a more encompassing approach to transhumanism, what More fails to consider is the role that literature can play in this respect.

Nevertheless, Hayles, Vint, and Mahon's contentions may ultimately lead us to suspect the existence of something that makes creative literature a tool more suitable than philosophical discourse to address some of the ethical dilemmas that human beings face in the posthuman era. Which is, then, the unique quality that sets literature apart from philosophical discourse? Some philosophers of literature have addressed this question in their works. Very often, they have concluded that literature's capacity to provoke a visceral response on the part of the reader is what differentiates it from philosophical discourse. Thus, in their edited volume *Philosophy of Literature*, Eileen John and Dominic McIver Lopes claim that the "emotional expressiveness and power" of literary works makes them "distinctive, interesting, and important," which differentiates them from philosophical discourse (165). In her contribution to the same volume, Martha Nussbaum describes the novel as "a paradigm of moral activity" and suggests that it is in the combination of aesthetics and content (content meaning here ideas and feelings) that the moral value of a literary text lies (329)—which may be true not only of literature but also of other kinds of artistic production (visual art, music, screened representations, etc.).

1.4. CYBERPUNK, POSTCYBERPUNK, AND BEYOND

As the previous section has set out to demonstrate, the last few decades have witnessed the emergence of a broad spectrum of cultural, artistic, and literary approaches to the subject of the post- and the transhuman. Out of all the different approaches, this dissertation is primarily concerned with how writers have dealt with the specific subject of the technological augmentation and improvement of the human condition. This section traces an evolution of the way writers have engaged with this topic, from the emergence of cyberpunk in the 1980s to that of a trend of twenty-first century fiction that directly engages with transhumanism and specific human enhancement technologies.

One of the earliest SF subgenres to engage with the implications of the technologically-prompted transition from human to posthuman was cyberpunk. The emergence of literary cyberpunk can be traced back to the publication, in the 1980s, of works such as William Gibson's *Neuromancer* (1984), Lewis Shiner's *Frontera* (1984),

volume one of John Shirley's *Eclipse* series (1985), and Bruce Sterling's *Schismatrix* (1985) (Murphy 15). In his contribution to the edited volume *The Routledge Companion to Cyberpunk Culture* (2020), Rob Latham claims that in spite of the efforts of some cyberpunk academics to emphasize the uniqueness of the genre, cyberpunk owes much to previous SF, especially to the New Wave SF (14). Thus, some themes that have come to be regarded as "quintessentially cyberpunk" had already started to take shape in earlier SF works of the 1960s and 1970s. Such would be the case of the rise of an information economy, the subsequent commodification of culture and associated "growth in cyborgized lifestyles," as well as the emphasis on simulation and the possibility of human beings leading a virtual existence as disembodied data (8). For his part, in the introduction to his work *Cyberpunk and Cyberculture: Science Fiction and the Work of William Gibson* (2000), Dani Cavallaro argues that cyberpunk received the influence not only of previous SF but also of American detective fiction of the 1920s and 30s, dystopian narratives, postmodernist fiction, and Norbert Wiener's cybernetics (8-12).

Nevertheless, some features make cyberpunk unique, such as its emphasis on the pervasiveness and ubiquity of technology. As Sterling claims in the preface to the cyberpunk short story anthology *Mirrorshades* (1986): "For the cyberpunks . . . technology is visceral. It is not the bottled genie of remote Big Science boffins; it is pervasive, utterly intimate. Not outside us, but next to us." Accordingly, some themes that recur in cyberpunk works are the possibility of technology invading the body ("prosthetic limbs, implanted circuitry, cosmetic surgery, genetic alteration") or the mind ("brain-computer interfaces, artificial intelligence, neurochemistry-techniques") and irrevocably altering human nature (xiii). However, if there is one feature that distinguishes cyberpunk from previous SF subgenres, it is its equal emphasis on invasive technologies, predominantly cybernetics and biotechnology, and on "urban subcultures inspired by a punk sensibility" (Cavallaro xvii). In this last respect, Cavallaro argues that cyberpunk works often depict characters that belong to certain urban subcultures and are frequently "outsiders, misfits and psychopaths" who live in a "murky world of addiction and crime" (14, 24).

In his 1998 essay "Notes toward a Cyberpunk Manifesto," SF writer and editor Lawrence Person claims that cyberpunk owes its lasting impact to its portrayal of worlds radically and pervasively altered by technological development. According to this critic, the fast pace of technological change of the late twentieth century led cyberpunk writers

to realize that, in the future, the integration of new technologies in society would not be gradual. Rather, technology would come to permeate simultaneously all spheres of life. This realization resulted in the portrayal of characters whose everyday lives was saturated by technology, a feature that has come to be regarded as distinctively cyberpunk. According to Person, this "immersive worldbuilding technique" can also be observed in the postcyberpunk works of the late 1980s and 1990s. Bruce Sterling's novel *Islands in the Net* (1988) inaugurated this new trend within SF, which differs from cyberpunk in its depiction of characters who, rather than being outsiders and misfits, are frequently "integral members of society." Thus, they often have jobs, families, and even children. Furthermore, the futures in which postycberpunk characters live are "not necessarily dystopic." On the contrary, they are often "suffused with an optimism" that ranges from wary to enthusiastic. Hence, while technology allows cyberpunk characters to alienate themselves from the corrupt social orders in which they live in, for postcyberpunk characters, technology is an integral part of their everyday lives, as it is for contemporary human beings. As Person puts it: "In postcyberpunk, technology *is* society. Technology is what the characters breathe, eat, and live in. . . . Postcyberpunk characters dwell in what Sterling has dubbed 'permanent technological revolution' even as we do today" (emphasis in the original). For Person, the postcyberpunk viewpoint is, therefore, "not outside the fishbowl looking in, but inside the fishbowl looking around." According to this critic, Neal Stephenson's *The Diamond Age* (1995) or Greg Egan's *Diaspora* (1997) are novels that show some of the above-mentioned features. Yet, Person acknowledges that the boundaries between cyberpunk and postcyberpunk are not always clear-cut and he even suggests that some cyberpunk and postcyberpunk works may not fit these definitions.

Remarkably, the heyday of cyberpunk coincided in time with the consolidation of the transhumanist doctrine. In fact, as hinted at above, cyberpunk works, as well as other SF works produced at the time, played a key role in the advance of transhumanism in the 1980s. Nevertheless, towards the beginning of the 1990s, the movement was still only familiar to a small sector of the population. It was in the last decade of the twentieth century that transhumanism became better known in the developed world—thanks to the work of some transhumanist institutions and associations (Ranisch and Sorgner 12)—and that writers of fiction started to incorporate distinctively transhumanist ideas in their writings. In his work *Singularities: Technoculture, Transhumanism, and Science Fiction*

in the 21st Century (2013), Joshua Raulerson traces the emergence, in the mid-1990s, of a trend of SF novels written by authors of different national origins that engage with the transhumanist concept of the technological Singularity.

Thus, the introduction to *Singularities* starts with a discussion of a passage from Vernor Vinge's novel *Marooned in Realtime* (1986), a work in which the now retired North-American SF writer and Professor of mathematics and computer science first postulated his theory of the Singularity. A few years later, in 1993, Vinge expanded his views on the technological Singularity in a talk entitled "The Coming Technological Singularity: How to Survive in the Post-Human Era." In the talk, later on published in the form of an article by the magazine *Whole Earth Review*, Vinge expressed his conviction that within thirty years human beings would have at their disposal technology that would allow them to create superhuman intelligence. This would presently put an end to the human era (Raulerson 9). Drawing on Vinge's ideas, Raulerson describes the Singularity as "a transhistorical threshold situated in the near or immediate future, upon which the nature and form of human existence will be profoundly, irrevocably, and unfathomably altered by a sudden explosion of technological development." Raulerson then points out that the Singularity will represent "a rupture so abrupt" that only those who experience it directly will be able to comprehend it (4).

More than two decades after Vinge's disturbing announcement, the Singularity has become a favorite subject in SF, a genre that has traditionally depicted worlds radically altered by futuristic scientific and technological developments (Raulerson 4). Nevertheless, the first writers who engaged with this topic found it particularly challenging. While predicting the coming of the technological Singularity was a reasonably easy and logical task, guessing the shape and characteristics of the event seemed to be more difficult. In this respect, Raulerson reminds us that Vinge's definition of the Singularity already points to the fact that it is "definitionally impossible to know what will happen in a Singularity event," or how life will be like afterwards. Thus, "any attempt to limn its shape and texture is not just tricky but inherently paradoxical" (8). According to Raulerson, the first writers to engage with the Singularity tried to understand the event "retrospectively, through characters who missed out on the event" and who were, therefore, not in a better position to understand the event than readers were (12).

However, in his work Raulerson identifies a new trend within SF of writers and novels that engage with the technological Singularity in innovative ways and in spite of

the above-mentioned limitations (20). Thus, drawing from "the naked singularity hypothesis," some contemporary SF writers have put forward the view that the Singularity may indeed be grasped and somehow understood through narrative (14-15). According to this hypothesis, there may be some abnormal events or singularities that, in spite of their "infinitely dense and theoretically anomalous" nature, are not "shrouded in event horizons but, in theory, directly observable from without" (14). Accordingly, instead of trying to "circumvent the black hole of the future, or peer timidly at it from a safe distance," these writers have "plunge[d]" in it by deploying a series of formal strategies that invite readers "to be subjectively transformed by the experience, to continuously emerge into the postsingular future-present they already inhabit" (15). Charles Stross, Cory Doctorow, Neal Stephenson, Greg Egan, Ken MacLeod, Peter Hamilton, Rudy Rucker, Bruce Sterling, and William Gibson are all writers who, since the mid-1990s, have sought new ways of approaching the Singularity. According to Raulerson, rather than trying to "coherently articulate what the Singularity *is*," these writers have explored instead "what it *feels like* to be in the mist" (17; emphasis in the original). Thus, they have often depicted disorienting and terrifying mental and emotional states that somehow mirror and intensify the experience of contemporary readers, who are immersed in a period of unprecedented historical change and crisis. Ultimately, these writers have proved that the Singularity is best approached "in a wacky, slapdash, frenetically paced, and utterly hallucinatory way."

To refer to this trend, Raulerson borrows the term 'postcyberpunk' from Person, who first used it in the above-mentioned "Notes Towards a Postcyberpunk Manifesto." The label postcyberpunk SF is, according to Raulerson, appropriate to refer to these recent approaches to the technological Singularity, which both break with and update 1980s cyberpunk's trademark themes and conventions (20). According to Raulerson, three main aspects differentiate postcyberpunk SF from first-generation cyberpunk. Firstly, writers of postcyberpunk SF engage with the Singularity "overtly and self-consciously," and even acknowledge at times the likelihood of something like it happening in a not too distant future (20). Secondly, many postcyberpunk SF writers have previous experience in the tech sector. Thus, Charles Stross holds a degree in computer science and Cory Doctorow has worked as a software developer. This makes them stand out from earlier SF writers such as William Gibson, who even claimed in an interview to be concerned not with how technology works but with how it affects people (21). Thirdly, postcyberpunk SF is

uncannily immediate. It is characterized by a "sense of total immersion in a historical moment that is occurring coextensively with its own narration" (21). Some postcyberpunk novels Raulerson analyzes in *Singularities* are Neal Stephenson's *Snow Crash* (1992), Greg Egan's *Permutation City* (1994) and *Diaspora* (1998), Cory Doctorow's *Down and Out in the Magic Kingdom* (2003), Charles Stross *Accelerando* (2005) and *Singularity Sky* (2003), and Rudy Rucker's *Postsingular* (2007).

Person and Raulerson provide, therefore, slightly different definitions for postcyberpunk SF. Thus, although both of them stress the presentness of the novels that belong to this trend, Raulerson directly engages with transhumanism while Person does not. The time gap between the publications of these works may account for these differences. Person's manifesto was published in 1998, a time when transhumanism as a philosophical movement was gaining strength in contemporary society but was still only familiar to a small sector of the population. Raulerson's work, by contrast, was released a decade and a half later, when transhumanist ideas had already become familiar to the population. In the first two decades of the twenty-first century, and perhaps most prominently in the second, there has been further change in the way writers engage with the topic of the technological augmentation and improvement of the human condition. This change seems to have been motivated, to a large extent, by the increased importance of transhumanism in contemporary society. At a time when transhumanist ideas circulate freely among the population and human enhancement is even one of the main issues in the agenda of certain political parties, some SF writers have turned their attention to this revolutionary movement. Most importantly, some writers who had hitherto remained largely outside the SF realm have also started to incorporate transhumanist topics in their works. Hence, the twenty-first century has witnessed the emergence of a trend of US fiction that fictionalizes some current transhumanist debates and engages hands-on with the potential and limitations of different human enhancement technologies.

What differentiates this trend from previous literary trends, and mainly cyberpunk, is, on the one hand, its sense of presentness. Compared to cyberpunk novels, the works that belong to this trend are less futuristic. They are usually set in a recognizable near-future, and explore either the possibilities opened up by specific future technologies or, more frequently, the possible future applications of technologies with which readers are already well familiar: biotechnology, information and communication technologies, life extension technologies, virtual reality technologies, etc. In this sense, they are not that

different from postcyberpunk SF works as described by Person. Furthermore, as happens with human beings in contemporary society, their characters are symbolically at the threshold of technological innovation. That is, they are at the exact point where their decisions concerning specific human enhancement technologies will influence their future development. Thus, they are still in time to halt the development of these technologies or, conversely, to help standardize their use. In his work *Enough: Genetic Engineering and the End of Human Nature*, Bill McKibben also points to the fact that human beings stand now at a crossroads in respect to technological development. Hence, he refers to the present moment as "the moment when we stand precariously on the sharp ridge between the human past and the posthuman future, the moment when meaning might evaporate in a tangle of genes or chips" (204). Against those critics who regard unrestrained technological development as something inevitable, McKibben claims that there is still room "to limit and contain these technologies, if we decided to do so" (x). This possibility also opens up in the novels that conform this trend.

However, most importantly, what brings these writers together is their similar way of thinking through the changes that these technologies may promote. As this dissertation sets out to prove, most of the works that belong to this trend provide neither techno-utopian nor technophobic perspectives on specific human enhancement technologies. Nevertheless, the message they convey is ultimately a message of warning. Hence, these works often give voice to transhumanist arguments on the pertinence of using some specific technologies to enhance the human condition, while also voicing some critical posthumanist concerns, specifically the fear that the use of these technologies for enhancement purposes will bring about disembodiment and dehumanization. In this last respect, these novels warn that should human beings come to regard technology as a shortcut to the future, as a way of fulfilling our long-held enhancement dreams, we could end up losing touch with the here and now, distancing ourselves from our loved ones, or evading our present problems and responsibilities in detrimental ways. Rather than turning to technology as a way out of our problems, or as a way to improve our lives or achieve instant and effortless satisfaction, these novels stress the need to focus on the present moment, to enjoy the here and now, to establish strong relationships with those around us, and to become resilient in the face of our problems.

Representative of this trend are novels by well-known North-American authors, such as *Generosity: An Enhancement* (2009) by Richard Powers, *Super Sad True Love*

Story (2010) by Gary Shteyngart, *The Lifecycle of Software Objects* (2010) by Ted Chiang, *The Circle* (2013) by Dave Eggers, or *Zero K* by Don DeLillo (2016). Also narratives by burgeoning writers, such as *Ready Player One* (2011) by Ernest Cline, *Upload* by Mark McClelland (2012), *The Answers*: *A Novel* (2017) by Catherine Lacey, or *Followers* (2020) by Megan Angelo are. The short story collection *Children of the New World: Stories* (2016) by Alexander Weinstein and Ted Chiang's short story "Liking What You See: A Documentary" (2002) also belong to this trend.[8] Beyond the North-American literary scene, other novels that show similar characteristics are *Limitless* (2001) by Irish writer Alan Glynn and *Memories with Maya* (2013) by Indian writer Clyde D'Souza.[9]

1.5. CORPUS OF ANALYSIS, RESEARCH AIMS, AND METHODOLOGY

Out of all the recent literary attempts at fictionalizing the possibilities and hazards of human enhancement technologies, there are three novels to which this dissertation pays special attention: *Generosity: An Enhancement* (2009) by Richard Powers, *The Circle* (2013) by Dave Eggers, and *Zero K* (2016) by Don DeLillo. The choice to focus on these three texts in particular is motivated, primarily, by the fact that they are all novels written by renowned contemporary North-American authors: Don DeLillo, Richard Powers, and Dave Eggers. These three writers have a relatively long writing career, and enjoy both national and international popularity.[10] Don DeLillo (New York City, 1936) published his first novel in 1971. Since then, he has written sixteen more novels, as well as several

---

[8] George Saunders's short story "I CAN SPEAK!™," originally published in 1999, also shows similar characteristics. For a detailed analysis of how the story warns against transhuman technological progress see Clare Hayes-Brady's contribution to the volume George Saunders: Critical Essays, edited by Philip Coleman and Steve Gronert Ellerhoff.

[9] A similar trend can be observed in twenty-first century cinema and TV. Films such as *Her* (Spike Jonze, 2013), *Ex Machina* (Alex Garland, 2014), *Transcendence* (Wally Pfister, 2014), *Lucy* (Luc Besson, 2014), and *Ghost in the Shell* (Rupert Sanders, 2017), or the cinematic adaptations of some of the above-mentioned novels such as *Limitless* (Neil Burger, 2011), *The Circle* (James Pondsolt, 2017), and *Ready Player One* (Steven Spielberg, 2018) also engage with how different human enhancement technologies may bring about disembodiment and dehumanization. The British series *Black Mirror* (Charlie Brooker, 2011-2019) and *Years and Years* (Russell T. Davies, 2019) also show similar characteristics.

[10] By contrast, other works that belong to this trend are written by younger North-American novelists and, in some cases, they represent the authors' first incursion in the world of writing. This is the case of *The Answers*, which is Catherine Lacey's second novel, or Megan Angelo's *Followers*, Ernest Cline's *Ready Player One*, and Mark McClelland's *Upload*, which are all debut novels.

short stories and plays, and is now considered to be one of America's greatest living novelists. Richard Powers (Evanston, Illinois, 1957) entered the world of writing in 1985. He is now the author of twelve internationally acclaimed novels. For his part, Eggers (Boston, Massachusetts, 1970) published his first nonfiction work in 2000. In spite of his younger age, his eleven novels and his non-fiction works, screenplays, and short story collections have already earned him a place as one of the most prominent contemporary North-American writers. The three novels that form the corpus of this dissertation are amongst these writers' latest publications and represent a point of departure in their writing careers. Hence, although in some of their works the three writers had already engaged—although, sometimes, in passing—with the possible implications of some of the latest scientific and technological developments, in these novels they engage hands-on with transhumanist philosophy and set out to ponder how specific human enhancement technologies may affect human life and culture.

Another motivating factor behind the choice of this particular corpus is the fact that each of these novels focuses on one specific kind of technology that has been considered in transhumanist circles as vehicle to fulfill some of our deepest human desires. Thus, *Generosity: An Enhancement* explores the possibility of using biotechnology to increase human happiness levels. *The Circle* focuses on how social networks and surveillance devices could help human beings build an interconnected, safer, more egalitarian and more democratic society. *Zero K* deals, in turn, with the possibility of overcoming death and achieving immortality through cryonics. Because they fictionalize different technologies and forms of enhancement, a joint analysis of these texts can help us gain a better understanding of the motivations that drive some relevant North-American authors to focus their attention on transhumanists who put technology to the service of overcoming human physical, intellectual, and psychological limitations. Additionally, it can draw our attention to the aspects that are most often overlooked by the advocates of transhumanism. In this respect, in his latest work, *Shaping the Fourth Industrial Revolution* (2018), German engineer and founder of the World Economic Forum Klaus Schwab argues that in order to appreciate the full impact of the technologies at the center of the Fourth Industrial Revolution—AI, new computing technologies, biotechnology, virtual and augmented reality, etc.—we need to adopt a "zoom-in, zoom out" approach. According to Schwab, zooming in involves "acquiring an understanding of the characteristics and potential disruptions of specific technologies."

However, most importantly, we should be able to zoom out "and see the patterns that connect technologies and the way they impact us" (18).

In the novels that form the corpus of this dissertation Powers, Eggers, and DeLillo address, therefore, topics which had previously belonged almost exclusively to the SF realm. Nevertheless, they do not give up on the sophisticated storytelling techniques that characterized their earlier works. On the contrary, the elaborate narrative strategies used by DeLillo, Powers, and Eggers make these novels interesting from a narratological point of view, and stand as the final motivating factor behind my choice of this particular corpus. Hence, as the different chapters of this dissertation will set out to prove, in *Generosity: An Enhancement* Powers uses metafiction to open a debate on the meaning of happiness. In *The Circle*, Eggers plays with the different effects of focalization and free indirect discourse and progressively makes readers realize how easily a technological utopia might turn into a dystopia. Lastly, in *Zero K* DeLillo constructs a narrative of trauma to address some of the ethical dilemmas that human beings could face should they be given the possibility to undergo premature cryopreservation. Ultimately, the elaborate narrative strategies used by the three writers set their novels apart from other novels that conform the previously-mentioned trend, such as Ted Chiang's *The Lifecycle of Software Objects*, Ernest Cline's *Ready Player One*, or Mark McClelland's *Upload*, all of which show more straight-forward realist modes of narration.

This dissertation analyzes the narrative strategies used by Powers, Eggers, and DeLillo in the above-mentioned novels to address the possibilities opened up for human beings, as well as the challenges posed, by specific human enhancement technologies—in particular biotechnology, social networks and surveillance devices, and cryonics. Furthermore, it aims to explore whether, in spite of approaching the subject of the technological augmentation and improvement of the human condition from a variety of perspectives and using different narrative strategies, there is something that links these writers in their understanding of what human enhancement can entail in the twenty-first century. The initial hypothesis is that what brings these writers together is a (critical posthumanist) fear that using technology for enhancement purposes will bring about disembodiment and dehumanization. Ultimately, this dissertation aims to demonstrate why fiction may be a suitable tool to make readers reflect on some of the ethical challenges posed by specific human enhancement technologies.

Each of the three central chapters of this dissertation is devoted to the analysis of one particular novel. The chapters are arranged according to the original publication date of each of the novels, from oldest to most recent. Thus, the first chapter is devoted to the analysis of Richard Powers's *Generosity: An Enhancement*, which was published in 2009. The second chapter is devoted to the analysis of Dave Eggers's *The Circle*, published in 2013. The third chapter offers an analysis of Don DeLillo's 2016 novel *Zero K*. As for the internal arrangement of the chapters, the first section of each chapter explores how the novels fictionalize contemporary debates on the technological enhancement of the human condition, in general, and on the use of a specific human enhancement technology (biotechnology, social networks and surveillance devices, and cryonics) in particular. In this last respect, each section first focuses on the ways the technologies depicted in the novels resemble or differ from existing technologies. Then, each section provides an overview of the most frequent arguments put forward by contemporary scientists, philosophers, and sociologists for and against the widespread use of such technologies. The second section of each chapter traces, from a narratological perspective, the narrative strategies used by each writer to convey the possibilities opened up by the technologies depicted in the novels, as well as to call our attention to the ethical and philosophical dilemmas these technologies present for its characters—and by extension, for human beings in contemporary society. Special attention is paid, as hinted at above, to how the novels express some critical posthumanist concerns, such as the fear these technologies will bring about disembodiment and dehumanization. The concluding chapter brings together the results obtained in the analytical chapters and traces similarities and differences in the way the writers approach the subject of the technological enhancement of the human condition. Furthermore, by laying the emphasis on the narrative strategies used by the writers and on the effect they have on the reader, this chapter ultimately proves why fiction is particularly well suited to open a debate on the possibilities and challenges human beings face in the technological era.

1.6. SHORTCOMINGS OF MY/THE WRITERS' APPROACH

In his 2013 work *Singularities*, Raulerson regrets that, as happened with cyberpunk, most of the published postcyberpunk SF authors tend to be male, white, native English-speaking, and Western middle class. As he puts it: "[T]he field of published postcyberpunk SF writers remains, as does its parent genre, something of a boys' club—

and one, moreover, in which the melanin-challenged, native English-speaking, Western middle class is conspicuously overrepresented." Raulerson then points out that the wider field of popular culture texts that openly engage with Singularity themes is "narrower still in the range of racial, ethnic, and gender perspectives available to readers" (22). Regrettably, at the beginning of the second decade of the twenty-first century, the main contemporary advocates of transhumanist philosophy (Max More, Nick Bostrom, James Hughes, Aubrey de Grey, Zoltan Istvan, etc.) still fit this pattern,[11] and the trend of novels this dissertation traces is no different from cyberpunk and postcyberpunk in this respect. Although there may be a few exceptions,[12] most of the published novels that conform this trend are written by male, white, and middle-class authors. This is certainly the case of the three novels that form my corpus of analysis: *Generosity: An Enhancement*, *The Circle*, and *Zero K*.

Powers, Eggers, and DeLillo, just like most of the writers that conform the trend described in this dissertation, fictionalize some contemporary transhumanist debates and voice some critical posthumanist concerns, such as the fear that human enhancement technologies may dehumanize human beings by alienating them from the present moment, from their loved ones, or from their problems and responsibilities. However, they disregard the possibilities critical posthumanism offers for challenging gender, race, and class[13] stereotypes, which have nevertheless been widely discussed by posthumanist scholars and also drawn the attention of some writers of fiction. The fact that the three writers are white, male, and come from privileged sectors of the population may help explain this bias. These writers, who may have never felt excluded from the liberal humanist paradigm, seem to be concerned with how technology may propitiate the loss of some universal human essence rather than with how the very definition of the human has changed under the posthuman paradigm. Their approach contrasts with that of other writers who have also dealt with technological change in their works, but who have adopted more gender, race, and class-conscious perspectives. This is the case of the

[11] Transhumanist thinker and designer Natasha Vita-More, who married Max More in 1996, is one of the few female exceptions.

[12] Some female writers who have written novels that belong to this trend are Catherine Lacey, Jennifer Egan, and Megan Angelo.

[13] It is worth mentioning here that even if class is not one of Powers, Eggers, or DeLillo's primary concerns, inequality of access to technology is indeed a background theme in the three novels.

above-mentioned twentieth-century novels by first and second-generation feminist SF writers. Also of contemporary novels such as Nalo Hopkinson's *Midnight Robber* (2000) and Nnedi Okorofor's *The Book of Phoenix* (2015), and of some other novels that belong to the trend traced by this dissertation, such as Catherine Lacey's *The Answers: A Novel* (2017).[14]

Furthermore, because the novels that form my corpus of analysis revolve around how technology affects human life and, therefore, still place human beings at the center of things, they leave out another important aspect of the critical posthumanist framework, namely the possibilities it offers for transcending anthropocentrism. Thus, Powers, Eggers, and DeLillo focus on the technological/augmentation side of the posthumanist question, denouncing the disembodiment and dehumanization inherent in transhumanist versions of the posthuman, but do not really endorse the critique of anthropocentrism carried out by critical posthumanism, nor explore other (more relational) posthuman forms of agency. Their approach contrasts with that of other novels which, following the ideas of some relevant critical posthumanist thinkers (i.e., Haraway, Braidotti, Ferrando), lay the emphasis less on how technology affects human life and more on the possibilities that the posthuman opens to challenge the doctrine of human exceptionalism. In fact, it is common to find both critical and literary works that deal with posthumanist issues but lay the emphasis less on human beings and more on the nonhuman beings and objects with which they cohabitate. Sanna Karkulehto, Aino-Kaisa Koinstinen, and Karoliina Lummaa's edited volume *Reconfiguring Human, Nonhuman and Posthuman in Literature and Culture* (2019) traces a trend of literary and cultural productions that depict different human/nonhuman encounters and stress the need to find more ethical ways of cohabitation. Thus, Charles Siebert's *Angus*: *A Memoir* (2000), Garth Stein's *The Art of Racing in the Rain* (2008), Jeff VanderMeer's *Annihilation* (2014), or Tuutikki Tolonen's *Monster Nanny* (2017) are all novels that, according to these critics, emphasize the pressing need for human beings to find more ethical ways of cohabiting with the non-human beings and objects with which we share the planet.

[14] See Rocío Carrasco's 2014 article "(Re)defining the Gendered Body in Cyberspace: The Virtual Reality Film" (2014) for a detailed explanation of how some turn-of-the-century SF films such as *The 13th Floor* (1999), *The Matrix* (1999), and *Johnny Mnemonic* (1995) reconfigure hegemonic gender identities and assumptions in the light of the posthuman.

Notwithstanding the foregoing limitations, the three novels that form the corpus of this dissertation offer valuable insights on the impact that human enhancement technologies may have on human life. More specifically, they direct our attention towards the possibility that by turning to technology human beings may disregard the present moment, their most intimate relationships, and/or evade their present problems and responsibilities. Therefore, they engage with a theme that has also concerned critical posthumanists, which is the possibility that the new technological developments may foster disembodiment and dehumanization (Hayles *How We Became* 5; Herbrechter 95-96; Vint 25). As this dissertation sets out to prove, and as critical posthumanists have insistently pointed out, "it is essential for embodiment to figure in our understanding of the posthuman subject" (Vint 25). Powers, Eggers, and DeLillo stress the need to go back to the here and now, to build solid relations with those around us, and to face with resilience our problems and responsibilities.

2. Richard Powers's *Generosity: An Enhancement* (2009): A Metafictional Reflection on the Biotechnological Pursuit of Happiness

2.1. INTRODUCTION

2.1.1. Richard Powers: the best of both worlds

Among those writers who have directly engaged with transhumanism and the promises and perils of specific human enhancement technologies we find the Illinois-born writer Richard Powers, who published his award-winning first novel, *Three Farmers on Their Way to a Dance*, in 1985. Since then, Powers has written eleven more novels, which have won widespread public and critical acclaim and have earned the writer a place "among the most significant contemporary American authors" (Burn 163). Remarkably, his latest novel to date, *The Overstory*, won the 2019 Pulitzer Prize for Fiction, something to which the novelist himself referred as "a marvelous late-career recognition" (qtd. in Charles). Above all, critics and readers have praised his ability to build intricate plots, intertwine multiple narrative forms, and bring together different fields of knowledge (Burn 163). In this last respect, in his contribution to *The Cambridge Companion to Postmodern American Fiction*, David Cowart refers to Powers as "an exemplary second-generation postmodernist" who, following the path set by some of his literary parents, such as Thomas Pynchon, "repeatedly contrives to unite the Two Cultures,"[1] namely scientific knowledge and the humanities (38). In a similar vein, in his contribution to the edited volume *Ideas of Order: Narrative Patterns in the Novels of Richard Powers*, Heinz Ickstad claims that Powers's particular positioning "at the crossroads of literature and the sciences" has placed him "in an ancestral line with authors like Thomas Pynchon, William Gaddis, Joseph McElroy, or Don DeLillo" (23).

[1] "The Two Cultures" is the title of the famous lecture that British physicist and novelist Charles Percy Snow delivered at the University of Cambridge in 1959. In the lecture, the contents of which would be later published in book form under the title *The Two Cultures and the Scientific Revolution* (1959), Snow claimed that western society's intellectual life was divided into two different cultures—the sciences and the humanities—and regretted the lack of understanding between the two.

If Powers is "scientifically literate," it is mainly thanks to his background in physics—he dropped out his physics major to pursue literary studies—as well as his occasional jobs in the field of computer programming (Wood). In view of this background, it is not surprising that Powers indulges in writing novels about science and technology. Some of the themes he has tackled in his works are genetics, artificial intelligence, and neuroscience—yet, he is generally not considered a SF writer but a writer of literary fiction (Hogan).[2] Thus, *The Gold Bug Variations* (1991) tells the story of Stuart Ressler, a young biologist who, in 1950s Illinois, discovers the structure of DNA. A parallel plotline features librarian Jan O'Deigh and Ressler's current coworker Franklin Todd, who, thirty years later, set on a quest to find out the reasons why the biologist abandoned his scientific career after his important discovery. In his pseudo-autobiographical novel *Galatea 2.2* (1995), Powers deals in turn with artificial intelligence. The fictional protagonist of the novel, Richard Powers, becomes the assistant to a cognitive neurologist that aims to create a model of the human brain with the help of technology. *The Echo Maker* (2006), a novel for which Powers was awarded the National Book Award, follows Mark Schluter's process of recovery from a car accident that has left him suffering from Capgras syndrome—a psychological condition that keeps him believing his sister Karin has been replaced by an imposter. While most critics agree that Powers successfully manages to bridge the gap between scientific knowledge and the humanities, some critics have also considered the writer's particular positioning a double-edged sword. Being in between two different fields leaves the writer, as Christopher Tayler argues, "vulnerable to anti-intellectualism from both sides of the gap." Thus, as this critic claims, "a scientist might legitimately be turned off by his repertoire of postmodernist gestures, a humanist by his techno-enthusiasm." Furthermore, Powers has sometimes been accused of "trying too hard to yoke together disparate realms," of attempting "too desperately" to bring together fields that are wide apart, such as poetry and modern technology (Domestico 35).

Powers's inclination towards bringing together different tendencies can also be perceived when analyzing his narrative style. In his monographic work on Powers, Joseph Dewey locates the writer in between two different fiction approaches: postmodernism and

[2] Some critics use the label 'literary fiction' to refer to those works of fiction which differ from 'genre fiction' (e.g., SF) in that they portray well-rounded characters, make use of a complex language and elaborate narrative styles and techniques, show a slower pace of narration, and often comment on sociopolitical concerns or reflect on the human condition (see Saricks 177-84).

realism. According to Dewey, Powers's novels show many elements which are typical of postmodern fiction, such as "an audacity in narrative structuring, . . . a broad use of referents drawn from high and low culture, . . . and a keen interest in language and specifically the imperative of tale-telling" (3-4). Nevertheless, what makes him stand out from his contemporary postmodern writers is, Dewey argues, his ability to incorporate in his works elements which are frequently found in traditional realist works, namely "rich storytelling, robust themes, nuanced characters, and an abiding compassion for the dilemmas of such profoundly recognizable characters" (4). In a similar light, in the introduction to an interview with the writer he conducted for *Contemporary Literature*, Stephen J. Burn argues that most of Powers's novels follow a similar narrative pattern. Thus, novel after novel, the writer first lays down "the foundation of a realist narrative," which has the effect of immersing readers in the characters' worlds and inciting them to empathize with the characters' viewpoints. What Powers does then is to bring "a second, metafictional narrative frame into contact with the realist story," thus challenging the codes of the latter and redirecting readers to the world outside the book or, to use Burn's words, driving them back "to the irreducible heft, weight, and texture of the entrapping world" (165).

Powers's 2009 novel *Generosity: An Enhancement* (*Generosity* from here on) shows many of the thematic and stylistic features recurrent in his work. On the one hand, the writer addresses in *Generosity* topics he had already explored in some of his previous novels, only updating them to fit the demands of the new century. Thus, in *The Gold Bug Variations* genetic coding had already played a key role, while in *The Echo Maker* the writer had opened a debate on the use of psychotropic drugs—that is, drugs used to treat the symptoms of different mental illnesses—and their possible adverse effects on human health. In *Generosity*, Powers takes the scientific search for the 'happiness gene' as his point of departure. The writer explores what could happen should happiness come to be regarded as an engineering problem and should biotechnology be put at the service of helping human beings lead happier lives—a prescient concern given the fast pace at which the biotechnology industry develops.

On the other hand, as happens in many of Powers's earlier works, *Generosity* also has a strong metafictional component. In line with what has been discussed above, Ickstad claims that all the novels written by Powers show, to some extent, metafictional elements, which invite readers to reflect on the fundamental role that stories play in our lives. In his

own words: "Without being overtly self-referential, even his most 'content-intensive' novels imply a metafictional reflection on how stories are told, how they unfold, how they are, in fact, central to our lives and our self-awareness" (24). In a similar vein, Antje Kley and Jan D. Kucharzewski argue that metafiction allows Powers to explore the complex relationship between human beings and the reality that surrounds them: "The novels' self-reflexive orders and symmetries use the powers of fiction to interrogate . . . the multiply layered reciprocal relation of the contemporary self to the world" (11). In *Generosity*, Powers presents his readers with two parallel narrative strands that interweave and eventually converge. As this chapter sets out to demonstrate, the metafictional techniques introduced in one of these narrative strands incite readers to mistrust the transhumanist discourse on the biotechnological pursuit of happiness presented in the other narrative strand. Nevertheless, what makes *Generosity* different from other novels by Powers is that it is more accessible, more 'reader-friendly.' It has in fact been described as "an excellent introduction to Powers's work, a lighter, leaner treatment of his favorite themes and techniques" (McInerney).

The novel tells the story of Russell Stone, a thirty-two-year-old failed writer who is appointed to teach a creative non-fiction evening class at the Mesquakie College of Art in Chicago. It is through a self-conscious, (apparently) heterodiegetic narrator—who eventually proves to be Russell himself—that we learn about Thassadit Amzwar, one of Russell's students at the Journal and Journey classes. Thassa is a twenty-three-year-old refugee of the Algerian civil war who, in spite of having gone through several traumatic episodes in her life—his father was killed in the war and his mother died from cancer sometime later—always shows a cheerful disposition. Her "enchantment," her "glee," and her "invincible grin" make Russell and the other students never want to leave the classroom: they are all "addicted to the woman's elation" (Powers *Generosity* 33, 48, 51, 32). After learning about Thassa's difficult life story, Russell starts searching the web and reading handbooks on happiness, fearing that Thassa's happiness may be drug-induced or, worse still, that she may be suffering from a mental condition. Russell also arranges an appointment with Candace Weld, the College's psychologist, who does not have any answers for Russell's questions but who soon shows an interest in "Miss Generosity" (26) herself. Eventually, Weld becomes sentimentally involved with Russell, as well as close friends with Thassa.

After a class meeting at an Irish bar, John Thornell, one of the students at the Journal and Journey classes, walks Thassa to her dorm. When she naïvely invites him to go up to see a volume of Tamazight poetry she had quoted from that night, Thornell tries to sexually assault her. However, Thassa manages to talk him out of doing it, leaving him "[curled] up into a fetus on her carpet, moaning like a thing trying to be unborn" (Powers *Generosity* 104). Thornell then turns himself in to the police, and Thassa and Russell are interrogated. When being asked if his student may be suffering from any "health conditions" or "behavioral quirks," Russell feels the moral obligation to tell the police Thassa may be "hyperthymic,"[3] that is, "[e]xcessively happy" (106). To Russell's surprise and worry, Thassa's story soon makes the news.

In a parallel narrative strand, the narrator tells readers about the filming and broadcasting of an episode of the *Over the Limit* show, a science talk show hosted by TV presenter Tonia Schiff. The episode, which is entitled "The Genie and the Genome" (Powers *Generosity* 19), features Thomas Kurton as an invited guest. Kurton is a genomicist renowned for isolating some complexes of genes associated with susceptibility to anxiety, depression, and even childhood hyperactivity. In the episode, the genomicist expresses his views on the need to use technology to create "[h]ealthier people. Stronger people. Smarter people" (20). Readers also learn about Truecyte, Kurton's biotech company, and the groundbreaking "association studies" (122) the company has been undertaking, which have identified some specific alleles associated with an increased sense of well-being. The results of these studies have not been published yet, mainly because of Kurton's "fear of prematurity": while his coworkers insist that it is time to get them published, the geneticist keeps "holding out for more data" (121). "'All good science pauses'" (123), the genomicist repeats once and again. The two narrative strands converge when, upon learning about Thassa's story in the news, Kurton decides she may be "the missing datum that Truecyte's three-year study needs" (128).

After Thassa accedes to having several psychological, biochemical, and genetic tests performed on her, the Algerian and the genomicist meet in Boston. The results of the tests confirm Kurton's suspicions: Thassa's genetic profile explains why she lives in

---

[3] In his work *Citizen Cyborg*: *Why Democratic Societies Must Respond to the Redesigned Human of the Future*, James Hughes describes "hyperthymia" as a genetic mutation "which gives its carriers an unfailingly sunny, positive disposition" (48). By contrast, he uses the term "dysthymia" to refer to a form of "mild depression" which is also partly genetically determined and is nowadays suffered by millions of people around the world (46).

"a continuous state of flow" (Powers *Generosity* 88). Her story soon attracts media and public attention, which leads to her email inbox being filled with emails from people "deluging her with intimate inquiries" or even offering to hire her as their personal trainer (117). Several biotechnology companies become in turn interested in buying her genetic material. When Thassa eventually accedes to selling her eggs as a way of helping her family financially, public opinion on her changes radically. Overwhelmed by all the negative input, Thassa asks Russell to drive her to her family's place in Canada. At the border, Russell is told he needs a passport to go back in the US. Consequently, the two characters see themselves forced to spend the night at a nearby motel and wait until the following day, when Thassa's uncle in Montreal can come down to take her. Nevertheless, this never happens, as upon turning on the TV and learning that the police have launched a manhunt for her and Russell—which the media has ironically labeled "The Pursuit of Happiness" (289)—Thassa takes her own life.

2.1.2. *Generosity: An Enhancement*'s reception

Since its publication in 2009, *Generosity* has attracted the attention of many academics and reviewers, who have engaged with the novel's thematic and stylistic peculiarities from different perspectives. While some critics have mainly focused their attention on the novel's thematic features and on its moral stance, other scholars have given the use of metafiction a more prominent role in their analyses. Among the former group of academics, we find Kathryn Hume, who in her 2013 article "Moral Problematics in the Novels of Richard Powers" claims that Powers's fiction offers readers two seemingly conflicting imperatives. On the one hand, it incites readers to find "joy and wonder" in acquiring knowledge in different fields, as well as in seeing how those fields interconnect (1). On the other hand, his fiction stresses the need to help those in a disadvantaged position. Powers's novels suggest, Hume argues, that one way of reconciling the two imperatives could be by trying to find happiness not in the accumulation of consumer goods or in power but in exercising our own minds and appreciating "joys that our culture has not learnt to cultivate" (11). Hume thinks that what Powers suggests is that if human beings consciously developed mental ways to enjoy life, "we would put much less consumerist pressure on our economic systems, and by helping others, we might gradually undo damage" (13). According to Hume, Thassadit Amzwar acts in *Generosity* as a "visionary" character who exemplifies Powers's philosophy on how human beings

may live ethically in the world (8). It is her "sense of the miracle of all life, no matter how damaged" that differentiates her from all the rich Americans who take drugs, pray, do yoga, and seek other magic solutions to lead happier lives (10). It is only with such a mental approach to joy that change may be possible, according to Powers (7). Although Hume fails to acknowledge the important role that genetics plays in Thassa's happiness, the writer's approach to joy as a state of mind that can be achieved through mental efforts rather than purchased (or technologically induced) will prove to be relevant for my analysis of the novel.

In a similar vein, some critics have read *Generosity* as a novel that denounces how happiness has been turned into a commodity in contemporary North-American society. In his 2019 article "'You're Going to Make Us All Happy': Orientalist Appropriations of the Berber Woman in Richard Powers's *Generosity*," Karsten Piep takes Kathryn Hume, Mary Esteve, and Alexander Scherr's works as his point of departure. According to Piep, these critics have all read *Generosity* as "an attempt to lay bare the mechanism by which post-industrial consumer culture seizes upon science to create and devour its own images of happiness" (50). Nevertheless, Piep then goes one step further and calls our attention to one particular aspect that has been overlooked in the above-mentioned analyses. More specifically, quoting from the novel, he argues that, as well as being a novel about "consumer society in the post-genomic age" (49), *Generosity* denounces the Occident's longstanding spiritual and cultural appropriation of the Orient still in recent times (51). Thus, Thassa is portrayed in the story as "a cause celèbre upon whom a rapacious public projects its desire for achieving lasting contentment" (49). Her "Eastern generosity" leads most of the characters in the story to be not so much interested in her as a person than in "getting hold of the Orientalist promise of true happiness she is imagined to embody" (51). Furthermore, Piep argues that, by trying not to narrate her personal history from or out of sorrow, Thassa complies with the migrant's "happiness duty" as described by Sarah Ahmed in her work *The Promise of Happiness* (53). In trying not to upset anyone with her stories as an Algerian refugee, Thassa omits "the colonial legacy of 'unhappy racism'" that haunts postcolonial Algeria and still reverberates in America (53). Nevertheless, Thassa's happiness discourse, Piep argues, ends up collapsing when she is publicly humiliated for acceding to selling her eggs—therefore, submitting to "the profane logic of modern market capitalism" (55).

A second group of academics has given the novel's formal aspects a more prominent role in their analyses, offering different interpretations of Powers's use of self-reflexivity and metafiction in the novel. One of these critics is Everett Hamner, who, in his 2011 article "The Predisposed Agency of Genomic Fiction" adopts a postsecular approach and defines genomic fiction as a kind of literature capable of addressing the tension between the two opposed (and uncompromising) attitudes that human beings tend to hold in relation to genomics in contemporary society. These two conflicting ideological positions are "genomic determinism"—that is, the belief that there is a one-to-one correlation between human genes and human traits and that human behavior is, therefore, determined from birth—and "genomic dismissivism"—the inclination to lay the emphasis on culture and downplay biology when explaining human behavior (415). Thus, Hamner describes Powers's *Generosity* as a postsecular work of genomic fiction that rejects these two ideological positions and offers instead a more balanced view of human agency, one that acknowledges "the immense impact of microbiology on identity without suggesting that selves can be reduced to cells," and to which he refers as "predisposed agency" (421). Powers's choice to write a metafictional narrative is, according to Hamner, key in this respect, as it invites readers to take an active role and engage in a constant process of revision, avoiding falling in the trap of uncompromising ideological positions. In Hamner's words: "Powers is striving for a fiction that operates quite oppositely to dogma, a hybridized creative nonfiction in which metanarratival layers are not just aesthetic glosses but critical elements for making and then unmaking mythology" (438).

For her part, in her work "Happiness in Distress: Richard Powers's *Generosity* and Narratives of the Biomedical Self" (2012), Karin Höpker describes *Generosity* as a novel that explores, both conceptually and structurally, the changing mechanisms of scientific knowledge production in the age of the genome (300). More specifically, the novel brings to the fore, according to Höpker, a biopolitical social regime in which the management, preservation, and improvement of life and health "are part of an apparatus of biomedical 'truth discourses,' which suggest a degree of inevitability and prioritized responsibility under the dominant paradigm of biopower" (290). Höpker then argues that the social process of scientific knowledge production explored in the diegesis finds its reflection in the extradiegesis (305). Thus, by means of building a self-reflexive narrative and self-consciously foregrounding the narrative voice (300), Powers manages to show that both literature and the self are narratively constructed and subject to an ongoing

"process of revision and reconfabulation" (307). Nevertheless, it is precisely this "openness and processuality of constant revision," according to Höpker, which may lead us to become "responsible and empathetic participatory actors within our social narratives" (308). Although Hamner and Höpker adopt different approaches in their articles, their shared emphasis on the capacity of metafiction and self-reflexivity to encourage readers to avoid holding extreme ideological positions in relation to genomics—and enter instead a process of constant revision—seems most pertinent.

Going one step further, some critics have interpreted *Generosity* as a novel that highlights the shortcomings of traditional genres of fiction writing—namely realist, modernist, and postmodernist fiction—and posits instead creative nonfiction as the most suitable genre for writing about the society we now live in. Thus, in her work "The Pursuit of Happiness 2.0: Consumer Genomics, Social Media, and the Promise of Literary Innovation in Richard Powers's Novel *Generosity: An Enhancement*," Heike Schaefer claims that, in *Generosity*, Powers embarks in "a project of literary innovation" (264). His is an attempt to find a new kind of "fact-oriented fiction" that can address and provide answers to the ethical, epistemological, and sociopolitical questions with which human beings are confronted in the consumer genomics and the information age (263). According to Schaefer, once current bio- and media-technological developments have turned the conventions of realist, modernist, and even postmodernist fiction obsolete, the novel tradition needs to reinvent itself if it yearns to remain relevant to the lives of both authors and readers (268-69). Schaefer then argues that it is through metafictional reflections interspersed in the narrative that the novel explores questions such as what would be an appropriate kind of fiction to the post-genomic concept of subjectivity, or what types of plot, conflict, or character development are still plausible in the information age (269). The kind of fiction that emerges as the most appropriate is the hybrid genre of creative nonfiction, a genre that blends nonfictional reportage and narrative fiction and that is "grounded in research and committed to factual accuracy, yet at the same time uses literary stylization and dramatization" (275-76). Thus, although *Generosity* does not completely "turn into creative nonfiction" but rather "remains narrative fiction," by incorporating scientific facts and intermedial references, Schaefer argues, the novel does encourage readers to question the possibility of establishing a rigid distinction between fiction and nonfiction (276). Overall, Schaefer concludes that Powers's novel "locates the promise of human enhancement in the imaginative capacity for revision that factual

fictions may unfold as they hover between observation and invention, creative and nonfiction, the given and the possible" (283).

Similarly, in his work "The Emergence of 'Genomic Life Writing' and 'Genomic Fiction' as Indicators of Cultural Change: A Case Study of Richard Powers' Novel *Generosity: An Enhancement* (2009)," Alexander Scherr refers to *Generosity* as a novel that "diagnoses 'cultural change,' while actively engaging in 'literary change'" (131). Taking Schaefer's ideas as his point of departure, Scherr claims that Powers's style in *Generosity*, which is characterized indeed by a blurring of boundaries between fact and fiction, stands in opposition to other more assertive kinds of life writing that also find their expression in the novel (137). More specifically, Power's creative nonfiction can be interpreted as a reaction to the discourses promoted by existing personal genomics or biotechnology companies such as 23andMe or Oxford Ancestors Ltd (138-39).[4] While these genotyping companies promise to help "people to complete their life stories and to understand who they really are" (126), Powers's novel renders "the writing of a life instead as a highly difficult—and even potentially violent—task" (139). In general, Schaefer and Scherr agree that the novel posits creative nonfiction as the most appropriate kind of fiction in the post-genomic and information age. For these critics, Powers's use of self-reflexivity involves either a way to explore the validity of this strategy or a way to blur the distinction between fact and fiction. In spite of their restricted interpretation of Powers's use of metafiction, their idea that factual fictions can make readers enter a process of revision and consider alternatives to the more assertive discourses of existing genomics and biotechnology companies seems to me particularly pertinent.

Therefore, *Generosity* has been approached from a variety of perspectives. While some academics have paid more attention to the novel's thematic and moral concerns,

---

[4] 23andMe is a biotechnology and personal genomics company founded in 2006 and based in Sunnyvale, California. The company offers its customers the possibility of having their saliva analyzed to find out whether they are carriers for (or are genetically predisposed to suffer from) certain health conditions. Furthermore, the company's genotyping services allow customers to know where their DNA is from out of over a thousand regions in the world, as well as the influence their DNA has on their facial features, or their taste and smell preferences (23andMe). Oxford Ancestors Ltd, which is based in Oxford, England, offers its customers the possibility of analyzing their DNA to establish the link between them and their ancestral clan mother or their ancient paternal clan—the last option being only available for male customers. Furthermore, customers with British or Irish paternal ancestors also have the possibility to find out to which of the ancient Tribes of Britain their paternal ancestor most likely belonged (Oxford Ancestors).

others have mainly focused on Powers's formal choices, particularly on his use of self-reflexivity and on his blurring of boundaries between fact and fiction. Thus, *Generosity* has been read as a novel that denounces how happiness has become commodified in post-industrial consumer North-American society while proposing instead a mental approach to joy (Hume). Furthermore, it has been read as a text that condemns how contemporary society still projects its images of happiness on the oriental Other, and, therefore, evidences the continuing Occidental cultural and spiritual appropriation of the Orient (Piep). From a postsecular approach, *Generosity* has been read as a work of genomic fiction that makes use of metanarratival elements to reject both genetic determinism and genetic dismissivism, and that argues instead for a more balanced view of human agency (Hamner). From a biopolitical perspective, Powers's novel has been interpreted as a text that reveals, both thematically and formally, that scientific knowledge and, specifically, the management, preservation, and improvement of life and health, are socially constructed (Höpker). Lastly, it has been understood as a novel that transcends traditional literary genres and posits instead creative nonfiction as a more suitable genre for the consumer genomics and information era (Schaefer and Scherr).

Generosity has also attracted the attention of some reviewers, who have both praised and criticized Powers's thematic and stylistic choices. Overall, there is consensus among them that his novel tackles an issue of prescient concern in contemporary society. Thus, Bernard Kelly has described *Generosity* as a novel of "a single striking idea." According to this reviewer, the novel effectively explores what would happen should technology allow human beings to isolate, and maybe replicate, the happiness gene. Similarly, in his review of the novel for the *American Journal of Bioethics*, Tony Milsanek has described *Generosity* as a novel that successfully addresses some of the ethical and philosophical questions related to the genetic engineering of happiness. Namely: "Is happiness a natural state for human beings? . . . If happiness can be genetically engineered, should it be? . . . Is the process of acquiring happiness more valuable than being genetically programmed for it?" For her part, Ailsa Stevens has praised Powers's efforts at "expanding" the debate on modern genetic technologies. Even if *Generosity* may provide readers with a not so accurate perspective on genetic technologies, or, to use Stevens's words, even if it the novel is "occasionally sensationalist and at times scientifically dubious," it successfully manages to bring to a

broader audience issues which had so far mostly preoccupied scientists, ethicists, politicians, and science communicators.

Powers's character development skills have proved to be a more contested issue. On the one hand, Jay McInerney has praised Powers's depiction of Thassa. According to the writer, by means of "refracting her through the others" and "endowing her with a richly textured biography," Powers manages to create a "plausible and even fascinating" character. Nevertheless, McInerney also acknowledges that, especially at the beginning of the story, Powers's characters and narrative are almost pushed into the background by the writer's scientific discourse and his metafictional divagations. For his part, James Wood refers to *Generosity* as Powers's "most schematic and coarse" work, and claims that it "exaggerates the weaknesses of his better work." More specifically, he accuses Powers of depicting highly stereotyped characters, who cannot break off the mold without turning the writer "almost insane with dim-witted suspicion." Thus, Wood refers to Russell Stone as "a shallow student of human affairs" who is bemused by Thassa's unremitting happiness and even tries to find a medical explanation to it. This character's "shallowness" mirrors the novel's, as "it is just as invested as he is in doltishly solving the great 'riddle' of Thassa's happiness." Furthermore, this reviewer criticizes Powers's tendency to exaggerate and depict rather extreme ideological positions, only to reject them afterwards. As he puts it: "As with the earlier work, the novelist establishes an exaggerated opposition between science and the humanities, determinism and free will, so that a rigged argument can proceed, in which both extremes are rightly rejected."

Remarkably, some reviewers have pointed to Powers's use of metafiction in *Generosity* as 'unsuccessful.' According to Anthony Domestico, the constant self-referential digressions that Powers introduces in the novel downplay its moral force. Furthermore, they seem to be just "a halfhearted defense against the charge of being naïve or unsophisticated," that is, a way of minimizing the risks that engaging with timeless philosophical questions—such as the meaning of happiness—entails (35-36). For his part, Kelly argues that the author's desire to intervene in his story can sometimes be "a wee bit weary," and claims that Powers (through Russell, the narrator) does not seem to realize that asking readers to "overlook the conventionality of his plot" has already become "a firmly established convention in itself." These negative reviews of Powers's use of metafiction in *Generosity* contrast with the more positive feedback offered by the above-mentioned academics. This chapter sets out to prove why Powers's narrative choices may

be most pertinent, ultimately aligning itself with those critics who have praised the writer's use of self-reflexivity.

2.1.3. *Generosity: An Enhancement*, a metafictional reflection on the biotechnological pursuit of happiness

Some of the arguments put forward by the above-mentioned critics and reviewers are of special relevance to my analysis of the novel. Firstly, Milsanek's claim that, in *Generosity*, Powers effectively fictionalizes some of the ethical and philosophical debates that surround the genetic engineering of happiness. Secondly, Hume's assertion that the novel denounces the commodification of happiness in contemporary society and stresses the need to adopt a less materialistic, more mental approach to joy. Thirdly, Schaefer and Scherr's belief that Powers's creative nonfiction stands in opposition to some assertive ideological discourses in contemporary society, such as the discourse of existing personal genomics and biotechnology companies. Finally, Hamner and Höpker's argument that by means of introducing some metafictional elements in his work, Powers encourages readers to distance themselves from uncompromising ideological positions and enter instead a process of constant revision. Taking these arguments as its point of departure, this chapter aims to explore how, by means of building a self-reflexive narrative, Powers incites readers to mistrust the transhumanist view of happiness as a bioengineering problem and conveys instead an alternative view of happiness as something human beings actively need to fight for.

Because Powers engages in *Generosity* with both the possibilities that biotechnology offers to create happier human beings and the ethical challenges it poses, an analysis of the novel from the combined perspective of the optimistic transhumanist philosophy and the more balanced and contrastive perspective of critical posthumanism seems most appropriate. So far, the novel has not been analyzed using these two critical frameworks, and no critic has set out to elucidate how Powers's formal choices reveal his stance in relation to contemporary trans- and posthumanist debates on the biotechnological pursuit of happiness. However, an analysis of the novel from this double perspective—with a special focus on the narrative strategies used by the writer—can most effectively bring to light its moral stance in this respect. Thus, this chapter first sets out to analyze the novel from the perspective of transhumanist philosophy. From beginning to end, the novel echoes contemporary transhumanist arguments on the pertinence of

using technology to enhance the human condition. Genomicist Thomas Kurton's role is crucial in this respect, as he embodies transhumanist ideals in the story. Readers have access to Kurton's transhumanist views mostly by means of the narrator's report of the genomicist's intervention in the *Over the Limit* show and of his conversations with the host of the show, Tonia Schiff, as will be explained later on in more detail. Thus, at some point Kurton expresses his belief that human beings are "trapped in a faulty design, stuck in a bad plot" (Powers *Generosity* 60). When faced with this situation, the genomicist metaphorically explains, they have two possible choices: "[S]it like the oblivious frog in the slowly warming pan until we cook, or take our natures into our own hands and sculpt out better angels" (164). He also claims that what human beings want is "to live longer *and* better" and is confident that "[w]hen they can do both, they will" (58; emphasis in the original). As a genomicist, Kurton focuses his efforts on getting rid of human misery, and the main aim of Truecyte—one of the experimental companies he has founded—is precisely to "free the subjugated populace and show what the race can do, armed with sustainable satisfaction at last" (40).

Although Kurton appears indeed as the main advocate of transhumanist ideology in the story, readers may get the feeling that he acts just as a spokesman of a discourse that has, as Höpker suggests in her article, come to permeate every aspect of the society that the novel depicts. Hence, on the second page of the novel, we learn that the walls of the subway car in which Russell Stone travels are filled with advertisements. Significantly, one of these ads reads: "*Outpsych your tyke. Want to know what makes the planet tick? Make your life just a little perfecter*" (Powers *Generosity* 4). The ad, which could well belong to a biotechnology company that helps parents ensure their children are born with a psychological advantage over other kids, gives readers a hint of the culture of improvement that prevails in that society. Furthermore, a good number of positive psychology manuals[5] are available to be consumed by a population that dreams of putting an end to unnecessary suffering. In the story, books such as "*Emotional Chemistry: How the Brain Lifts and Lowers Us*" (125), which set out to untangle the secret of happiness,

[5] The Positive Psychology Institute (PPI) defines positive psychology as "the scientific study of human flourishing," that is, "the study of the strengths and virtues that enable individuals, communities and organisations to thrive" ("What is Positive Psychology?"). The PPI is an organization founded in 2008 and based in Sydney, Australia, that "integrates the emergent theory, research and evidence-based practice of Positive Psychology . . . with that of traditional Psychology" and provides psychological services "including therapy, treatment and counseling for individuals and couples across a range of presenting issues" ("About PPI").

fill the shelves of bookshops and libraries, testifying to the widespread desire of the population to lead happier, more fulfilling lives.

Also remarkable is the widespread use of mood-enhancing drugs in the society depicted by Powers. A good number of characters take different kinds of drugs in an attempt to lead lives that are more joyful or to solve certain psychological or behavioral problems. Thus, readers learn that Russell's brother Robert, who suffers from Asperger syndrome, takes selective serotonin reuptake inhibitors on a regular basis to treat his personality disorders. These pills allow him, he affirms, to "talk to strangers without wigging" and to "feel a little bigger" than he really is (Powers *Generosity* 39). Russell, on his part, takes doxylamine for his insomnia problems. Furthermore, at some point in the story Russell takes "half a milligram of Ativan" (189), a tranquilizer which he borrows from his brother to ease his nervousness before going to Candace's place to watch the recording of "The Genie and the Genome" episode. Readers also learn about Russell's past experience with cocaine, a drug which he took during a trip to the desert with his former girlfriend and which made him feel, in his own words, "full and funny and grateful and even powerful" (160). Candace and her husband, on their part, have also taken MDMA, also known as Ecstasy, before. While for her husband it was "one of the most meaningful experiences of his life" (90), Candace felt depressed after taking it.

Because the novel fictionalizes contemporary transhumanist discourses on the pertinence of increasing human wellbeing and satisfaction by means of technology, an analysis from the perspective of transhumanist philosophy seems most pertinent. Nevertheless, transhumanism is an inherently optimistic movement that tends to overlook the most nefarious consequences of human enhancement technologies, which points to the need to analyze the novel from the more encompassing perspective of critical posthumanism. Analyzing the novel from this perspective can not only trace the possibilities that increasing human happiness levels through biotechnology presents for human beings but also shed light on some of the ethical challenges that it poses and that transhumanist critics often overlook.

Therefore, the first section of this chapter evaluates the genomicist Thomas Kurton's views on the need to put biotechnology to the service of creating happier human beings in relation to some of the arguments put forward by some transhumanist critics in contemporary society. Then, it recapitulates some of the most frequent arguments in favor

and against using biotechnology for enhancement purposes. The second section of the chapter focuses, firstly, on the narrative strategies used by Powers to introduce the transhumanist discourse on the possibilities of using technology to enhance the human condition and call our attention to the ongoing process of construction and manipulation to which this discourse is subjected. The second part of this section provides, in turn, an in-depth analysis of the different metafictional techniques used by Powers to denounce constructedness of, as well as the disembodiment and dehumanization inherent in, contemporary transhumanist discourses on the genetic basis and the biotechnological pursuit of happiness. While these discourses present happiness as an engineering problem and stress the urgency (and the inevitability) of turning to biotechnology to lead happier lives, *Generosity* proposes instead a different approach to happiness as a state of mind that can be reached by means of being resilient in the face of our problems, establishing solid relationships with the people around us, and enjoying the present moment.

2.2. *GENEROSITY: AN ENHANCEMENT* AND TRANSHUMANISM

2.2.1. Biotechnology and the genetic lottery for happiness

The possibility of using technology to increase human happiness levels stands as one of the leading enhancement options being discussed in transhumanist circles. In his contribution to the work *H+/-: Transhumanism and Its Critics*, Nick Bostrom claims that, by means of using science and technology, transhumanism aims to "increase human health-span, extend our intellectual and physical capacities, and give us *increased control over our own mental states and moods*" ("In Defense" 55; my emphasis). The Transhumanist Declaration—a document first crafted in 1998 by Bostrom and several other thinkers—points, in turn, to eliminating involuntary suffering as one of the main goals of the transhumanist movement. According to the signers of the declaration, the "alleviation of grave suffering" should be considered an "urgent priorit[y]" and, therefore, has to be "generously funded." North-American sociologist and bioethicist James Hughes, for his part, claims that rather than valuing pain and suffering, society should pursue the ethical goal of making life "as fantastic for as many people as possible" (44). According to this critic, it is in fact "our ethical and political responsibility" to do whatever we can to prevent citizens from being "less able, less healthy, less intelligent or

less happy than they otherwise could be" (223; my emphasis). This includes making sure that everybody has access to technologies that alleviate suffering (10).

This enhancement aim is built around the idea that there is a genetic component to happiness, that is, that our genetic makeup determines whether we are more or less predisposed to experience happiness and that this mental state is, therefore, somehow determined from birth. Over the last few decades, different scientific studies have proved that there is indeed a correlation between the presence of certain genes and the development of happy, anxious, or neurotic personalities. As early as 1996, David Lykken and Auke Tellegen published the seminal paper "Happiness is a Stochastic Phenomenon," in which they reported the findings of a ten-year study that assessed variations in happiness or subjective well-being[6] in twin brothers and sisters. The results of this study proved, according to Lykken and Tellegen, the existence of a stable—and genetically determined—set point for happiness (189). More recently, other studies have confirmed Lykken and Tellegen's findings. Of special relevance is a 2016 paper entitled "Genetic Variants Associated with Subjective Well-Being, Depressive Symptoms, and Neuroticism Identified Through Genome-Wide Analyses" (Okbay et al.). The paper, which is signed by over a hundred researchers from seventeen different countries, reports the findings of a large-scale study aimed at establishing genetic links to depression, happiness, and other psychological traits. After analyzing genomic material from almost 300,000 people, the authors of the paper managed to identify three genetic variants associated with subjective well-being, two genetic variants associated with depressive symptoms, and eleven variants associated with neuroticism.

Nevertheless, the authors of the above-mentioned studies also point to the important role that the environment plays in determining human happiness levels. Thus, Lykken and Tellegen claim that "the variance in adult happiness" is as determined by genetic factors as it is by "the effects of experiences unique to each individual" (19). For his part, Daniel J. Benjamin, one of the authors of the 2016 paper, claims that genetics is by no means the only factor that determines subjective well-being, depressive symptoms, and neuroticism. According to this academic, the role that the environment plays in this respect is "at least as important, and it interacts with the genetic effects" (qtd. in DiSalvo).

[6] Writing for *Forbes*, science writer David DiSalvo describes subjective wellbeing as "the thoughts and feelings we have about the quality of our lives, which psychologists define as a central component of happiness."

Consequently, these academics adopt, to borrow the terminology used by Hamner in his analysis of *Generosity*, neither genomic determinist nor genomic dismissivist ideological positions.

While transhumanist critics do acknowledge the role played by environmental factors, they often regard happiness as essentially a product of the 'right' genetic coding. Thus, they believe that, with the appropriate technology, predisposition to happiness could be eventually pre-programmed or, in a worst-case scenario, that cheerfulness could be technologically induced. In his work *Happy-People-Pills for All,* Canadian Professor of philosophy Mark Walker points to genetics as "the largest single factor in happiness variation" (164) and metaphorically sorts the population into two different groups: "winners and losers in the genetic lottery for happiness" (10). Then, this critic argues for the need to use current and future technologies to "alter or 'compensate' those who have not won the genetic lottery" (155), and points to pre-implantation genetic diagnosis (PGD), genetic engineering, and advanced pharmacology as the three leading technological developments that promise to alter the biological basis of happiness (165).[7] In *The Hedonistic Imperative*, a work which argues for the need to eradicate suffering in all sentient life, British philosopher David Pearce predicts that "a few generations hence," human beings will be able to genetically pre-program happiness through germ-line gene-therapy. He contends that happiness will be hardwired "from the womb." In the meantime—or, to use the philosopher's own words, "in the transitional era before global paradise-engineering unfolds"—chemical mood enhancing drugs will be essential. He predicts that the drugs developed in the twenty-first century will be "potent, long-acting mood brighteners," radically different from today's "clinical 'psychic anaesthetisers'[8] or 'quick-hit' street-drugs" (6). Other future technologies that have been proposed to

[7] To a large extent, all these technological developments depend on current and future advances in the field of biotechnology. In the introduction to the work *Beyond Therapy: Biotechnology and the Pursuit of Happiness*, the President's Council on Bioethics define biotechnology as "the processes and products (usually of industrial scale) offering the potential to alter and, to a degree, to control the phenomena of life-in plants, in (non-human) animals, and, increasingly, in human beings." Ultimately, the members that make up the Council regard biotechnology as "a form of human empowerment" (2).

[8] In this respect, Walker calls our attention to the fact that prescribing mood-altering drugs is now a common practice among health care practitioners in Western nations. Thus, drugs such as Sertraline, Escitalopram, Fluoxetine, and Bupropion (better known by their trade names Zoloft, Lexapro, Prozac, and Wellbutrin) are widely used to treat symptoms of depression (3).

eliminate suffering and increase human happiness are computer implants and molecular medicine (Young 160), and nano-neuro brain prostheses (Hughes 47).

In line with some of the arguments mentioned above, Kurton—the fictional genomicist depicted in *Generosity*—believes happiness to be "chemical" (Powers *Generosity* 40). Furthermore, the narrator recounts that he often puts forward the argument that there is something inherently wrong in the way human beings process delight. According to him, "the machinery of gladness that *Homo sapiens* evolved over millions of years in the bush is an evolutionary hangover in the world that *Homo sapiens* has built" (40; emphasis in the original). Thus, in his article "Stairway to Paradise," he argues that while stress and depression were mechanisms for survival "back on the savannah," human beings are now "somewhat safe" and, therefore, should get rid of the "negative feedback loops and illusory come-ons" they are condemned to experience as a legacy of the time "when mankind was on the run" (40). In a promotional event for the article Kurton publishes after analyzing Thassa's genetic profile, the genomicist expresses his belief that human beings are now about to enter "a new era in our understanding of the foundations of emotion" (181). Furthermore, in "The Genie and the Genome" episode of the *Over the Limit* show, he expresses his conviction that, in a not too distant future, human beings will be "biologically literate" and scientists will be able to program the genome in the same way as they now program computers (175). The study Kurton and his colleagues at Truecyte have been undertaking, which has identified certain alleles associated with an increased sense of well-being, is a clear step in that direction. Ironically, echoing the language used by Walker in *Happy-People-Pills for All*, the article Kurton publishes after analyzing Thassa's genetic profile claims the Algerian to have an "optimal allele assortment—the *happiness jackpot*" (166; my emphasis).

Like the above-mentioned contemporary transhumanist philosophers, Kurton believes that technology should be put to the service of creating happier human beings, and that is precisely the project he aims to embark on next. Echoing Pearce's ideas, in the episode "The Genie and the Genome," several extracts of which are reproduced in part one of the novel, the fictional genomicist expresses his conviction that, in a few decades, germline engineering will allow human beings to have "artificial chromosome pairs" loaded with "useful genes" and inserted "alongside the regular set" of chromosomes (Powers *Generosity* 98). Later on, off-camera, Kurton tells the host of the show that Truecyte's "initial *products*" will probably consist of pharmaceuticals (178; emphasis in

the original). These drugs, he clarifies, will have nothing to do with "the shot-in-the-dark stuff that we dispense today." Rather, they will be "tailor-made to the genome of the recipient. Smart bullets, genetically personalized prescriptions" (178).

Another technological development that is mentioned in the novel and that could eventually help human beings achieve happiness is pre-implantation genetic diagnosis. As happens in contemporary US society, in the society depicted in the novel reproductive clinicians already screen embryos for genetic disorders before their implantation[9]—thus, readers learn about a Chicago suburban couple who used PDG to prevent their daughter from inheriting the colon cancer that had "ravaged her father's family" (Powers *Generosity* 101). But the novel further suggests that, in a near future, embryos could eventually be screened for good traits, such as predisposition to happiness: "A new industry, following only voluntary guidelines, already screens embryos for hundreds of genetic diseases. And Tonia Schiff will bet her return ticket that some billionaire, somewhere, is already paying to have his offspring screened for good traits" (202). In this respect, Walker has claimed that while at present PDG is most frequently used to screen embryos for genetic diseases, it could potentially be used to select "embryos with a greater chance of high IQ, athletic ability, perfect pitch, and so on." Thus, if researchers eventually discovered genes associated with increased happiness levels, parents could decide to implant embryos genetically predisposed to greater positive affect (165).

Therefore, the novel does not mention any technology that has not been considered by transhumanist critics as a possible means of creating happier human beings. Some of these technologies, such as mood-enhancing drugs and PGD, are, as hinted at above, already being used in contemporary US society—even if, most of the time, just therapeutically. Other technologies, such as somatic and germline gene therapy, are still at an early stage of development. As the following section aims to prove, one of the

---

[9] In a 2018 article published in the *AMA Journal of Ethics*, Michelle Bayefsky points to the fact that, unlike in most European countries, where there exist legal structures that determine permissible uses of PDG, there are no legal limitations on the use of this technique in the US. The lack of regulations makes it possible for PDG to "be used for any condition for which genetic testing is available at the discretion of fertility treatment clinicians and their patients." Thus, while PDG is mainly used to help parents ensure their offspring are unaffected by heritable health conditions (such as cystic fibrosis), a small percentage of clinics are also using this technique to "select for a disability, such as deafness or achondroplasia," or for "sex selection" (1160).

biggest hopes (and fears) concerning both existing and future biotechnologies is that they could eventually be put to the service of enhancing the human condition. This is, in turn, one of Powers's main concerns in *Generosity*.

2.2.2. Recapitulating the debate on the biotechnological pursuit of happiness

In the preface to the work *Beyond Therapy: Biotechnology and the Pursuit of Happiness*, Leon Kass points out that biotechnology can serve two different purposes. On the one hand, it can be used therapeutically. On the other hand, it may be used to enhance human capabilities. Thus, he describes therapy as "the use of biotechnical power to treat individuals with known diseases, in an attempt to restore them to a normal state of health and fitness." By contrast, he refers to enhancement as "the directed use of biotechnical power to alter, by direct intervention, not disease processes but the 'normal' workings of the human body and psyche, to augment or improve their native capacities and performances" (13).

Most critics are convinced of the pertinence of using biotechnology for therapeutic purposes. In this respect, Hughes affirms that "[m]aking the deaf hear, blind see and lame walk are relatively uncontroversial applications of emerging technologies" (18). In a similar vein, when discussing somatic gene therapy,[10] Bill McKibben makes the following claim: "No one I've ever talked to out-and-out opposes somatic gene therapy" (9-10). Regarding mood enhancers, Walker points out that while bioconservative critics oppose their use for enhancement purposes, they generally agree that using them for therapeutic purposes is acceptable. Hence, even Kass—a fierce critic of increasing human happiness levels through pharmaceuticals—approves of using selective serotonin reuptake inhibitors (SSRIs) to treat some kinds of depression (Walker 11). The possibility of using biotechnology for enhancement purposes is, however, a much more controversial issue. In the preface to the above-mentioned work, Kass warns that "those uses of

[10] The basic difference between somatic and germline gene therapy is that the genetic alterations introduced in somatic gene therapy are aimed at correcting genetic defects and only affect the individual patient, while those introduced in germline gene therapy are aimed at enhancing certain human traits and can be inherited by the individual's descendants (Rifkin 27; Hughes 16).

biotechnology that go ‘beyond therapy,’ beyond the usual domain of medicine and the goals of healing” are “much more ethically challenging” (*Beyond* 6, 10).[11]

Transhumanist critics, seemingly oblivious to this debate, agree on the fact that biotechnology should not only be used for therapeutic purposes but also put to the service of creating happier human beings. Simon Young even claims that using technology to ensure our offspring are “mentally and physically as strong, healthy, and happy as possible” should be “considered a moral *imperative* for any *compassionate* species” (60; emphasis in the original). He then uses a striking metaphor to illustrate how, in his opinion, happy posthumans will one day look back at the present pain-enduring society:

> Our stoical acceptance of unhappiness will one day be regarded as the behavior of a primitive species. In the future, we will look back at a society which allowed the mentally or emotionally vulnerable to crawl around dingy rooms sticking needles into their arms in order to avoid conditions of emotional distress with the same horror that we look back at slavery today. (251-52)

Some critics have taken a closer look at certain technologies that could help human beings lead happier and more fulfilling lives. Thus, in *The Hedonistic Imperative*, Pearce predicts that in a not too distant future, nanotechnology and genetic engineering will abolish human suffering and help human beings lead happier and more fulfilled lives (28). More specifically, human beings will benefit, according to this critic, from “an unprecedentedly vivid sense of reality, a perpetually enriched feeling of meaningfulness and significance, a sense of heightened authenticity, and never-ending raw-edged excitement—or intense serenity and spiritual peace” (12). In *Happy-People-Pills for All*, Walker expresses, in turn, his belief that “there are morally compelling reasons” to allow and even encourage the use of mood-enhancing drugs for enhancement purposes (15). In his own words: “[I]f governments have a moral duty to promote the wellbeing of their citizens, then governments have a moral duty to develop happy-people-pills” (17). Similarly, in the “Transhumanist FAQ,” Bostrom argues that using genetic medicine or embryonic screening to maximize the likelihood of “a healthy, happy, and multiply

[11] Some critics even point to the difficulty of drawing a clear line between therapeutic and enhancement uses of biotechnology. As bioethicist Adrienne Asch puts it: “If you say you’re going to use it for disabilities, but you are not going to use it for character traits, then is schizophrenia a disability but depression a character trait? . . . When is dwarfism a disability, and when is being short a social problem?” (qtd. in Stolberg).

talented child" is an acceptable application of parental reproductive freedom. This critic further argues that "parents have a moral responsibility to make use of these methods, assuming they are safe and effective" (21).

Other critics have gone one step further and pointed to some individual and collective benefits of building a happier population. In *Citizen Cyborg: Why Democratic Societies Must Respond to the Redesigned Human of the Future*, Hughes contends, in line with the thesis statement of his work, that creating a happy and optimistic population could have a positive impact on democracy. Freed from the burden of suffering and depression, happy citizens would be, according to him, more likely to engage with life, community, and democracy (50). In an article that analyzes the pertinence of using germline genetic engineering to promote human well-being, Bostrom dismisses, in turn, the claim that parents could have trouble loving their artificially conceived children. As opposed to those critics who claim that being able to choose the genes of our offspring could lead to parents regarding their kids as mere products and, therefore, loving and respecting them less, Bostrom argues, in a highly questionable manner, that it may have just the opposite effect. In his own words: "We might speculate, instead, that germ-line enhancements will lead to more love and parental dedication. Some mothers and fathers might find it easier to love a child who, thanks to enhancements, is bright, beautiful, healthy, and happy" ("Human" 498).

Taking a less optimistic stance, other critics have warned in their works against the possible adverse consequences of enhancing human capabilities by means of biotechnology. There are two arguments that tend to recur: the fear that using biotechnology for enhancement purposes may bring about even greater social inequality, and the fear that human beings may end up losing part of their humanity in the process. Among those critics who have warned that using biotechnology to create more intelligent, healthier, and happier human beings could lead to some sectors of the population being left behind, Francis Fukuyama clearly stands out. In *Our Posthuman Future*, Fukuyama claims that should wealthy parents have the choice to enhance the intelligence of their offspring by means of genetic engineering, a "full-scale class war" could break out (16). "What will happen to political rights," Fukuyama wonders, "once we are able to, in effect, breed some people with saddles on their backs, and others with boots and spurs?" (10). Although Fukuyama explicitly focuses on using genetic engineering to bring more intelligent children to the world, his argument could also apply to any other technology

that could help the wealthy give their children a head start (including predisposition to happiness) and that could, consequently, expand the gap between the rich and the poor.

On this matter, Bostrom himself imagines a scenario where "the privileged stratum of society" enhance themselves and their progeny to a point where "the human species . . . splits into two or more species that have little in common except a shared evolutionary history." In this scenario, "the genetically privileged" become "ageless, healthy, super-geniuses of flawless physical beauty, who are graced with a sparkling wit and a disarmingly self-deprecating sense of humor, radiating warmth, empathetic charm, and relaxed confidence," while "the non-privileged remain as people are today but perhaps deprived of some [of] their self-respect and suffering occasional bouts of envy" ("Human" 502). According to Bostrom, this is something that human beings should avoid at all costs. In his work *Liberation Biology: The Scientific and Moral Case for the Biotech Revolution*, Ronald Bailey dismisses these claims and suggests instead that biotechnology, and more specifically genetic engineering, could help bridge the gap between 'winners' and 'losers' in the genetic lottery. Thus, he claims that "safe genetic engineering in the long run is more likely to ameliorate than to exacerbate human inequality," as some parents will be able to provide their offspring with "beneficial genes for improved health and intelligence that other children already get naturally" (337-38).

Another issue of concern among critics is the prospect that biotechnology may dehumanize human beings in some way. In this regard, Fukuyama claims that "the deepest fear" that human beings tend to express about biotechnology is the fear that it will eventually rob them of their humanity, which he defines as "some essential quality that has always underpinned our sense of who we are and where we are going, despite all of the evident changes that have taken place in the human condition through the course of history." Worse still, human beings may lose their humanity without knowing we have lost something valuable. To use Fukuyama's words: "We might thus emerge on the other side of a great divide between human and posthuman history and not even see that the watershed had been breached because we lost sight of what that essence was" (*Our Posthuman* 101).[12]

[12] In this respect, Kass argues that "in a society with a perfected technology of pleasure," people could end up losing sight of the values that have traditionally defined what it means to be human, such as love, fear, hope, pain, and struggle (34). Worse still, they could do so without realizing it, just as happens to the

The President's Council on Bioethics argue that biotechnology, and more specifically mood-enhancing drugs, could lead human beings to disregard the connection between our states of mind, that is, our moods, feelings, or dispositions, and the actions and experiences these states of mind usually accompany (238-39). Hence, it could invite human beings to regard "contentment, pleasure, and joy" as goals, as "ends in themselves, perhaps one day inducible at will," rather than as inextricably linked to the fulfilling activities and affective bonds that are at the center of human happiness (213). In turn, this could have a negative impact on interpersonal relationships. Human beings could end up loving "feebly" or caring "shallowly," as well as "losing the fine texture of emotional and psychic life and weakening our appreciation for the very human attachments that make life most meaningful" (257). Furthermore, biotechnology could lead human beings to regard "distress, anxiety, and sorrow" as "diseases to be cured, perhaps one day eradicated," rather than as reflections of the frailty of human life and inextricably linked to the difficulties and heartbreaks "that accompany the pursuit of happiness and the love of fellow mortals" (213).

Nevertheless, The President's Council on Bioethics stress the important role negative emotions play in our lives. According to them, the difficulties we encounter in life make us better appreciate the reality that surrounds us: "[L]ife's hardships often make us better-more attuned to the hardships of others, more appreciative of life's everyday blessings, more aware of the things and the people that matter most in our lives" (258). In a similar vein, Fukuyama argues that the most praiseworthy human qualities are usually linked to the way human beings respond to, confront, defeat, or even surrender to pain, suffering, and death. According to him, if these negative emotions were eradicated, there would be "no sympathy, compassion, courage, heroism, solidarity, or strength of character" (*Our Posthuman* 173). For his part, Professor of Modern Judaism Hava Tirosh-Samuelson claims that if the transhumanist philosophy is "misguided" it is precisely because it "technologizes" our deepest human values, such as the way we understand happiness and perfection ("In Pursuit" 215). Rather than regarding happiness as the product of virtue and moral training (in line with traditional approaches to happiness), transhumanists regard it as "a product of engineering" (Tirosh-Samuelson "Engaging" 38).

---

characters of Aldous Huxley's dystopia *Brave New World*, who are happy, healthy, and "don't know that they are dehumanized, and, what is worse, would not care if they knew" (35).

Other arguments against the use of biotechnology to create happier human beings include the impossibility of ascertaining whether we are happy because of the things that are happening to us or because we were pre-programmed for experiencing happiness before we were born[13] (McKibben 48-49), the impossibility of opting out the biotechnology revolution[14] (McKibben 34; Fukuyama "Transhumanism"), and the fear that biotechnology companies will regard the "human urge toward 'improvement'" as a chance to increase their profit margins (President's Council 13).

In view of these potential hazards, some critics have stressed the need for actions to ensure that biotechnology is used in ways that are beneficial rather than harmful for the human condition. In this respect, McKibben has expressed his belief that "there is still room to limit and contain" the use of biotechnology (x). Furthermore, he has claimed that in our current cultural moment, with human beings standing at the crossroads "between the human past and the posthuman future," the need for regulations is most urgent (204). Fukuyama, for his part, has argued for the need to disregard pessimist discourses about the inevitability of technological development and use instead the power of the state to regulate any technological development that does not serve human goals (*Our Posthuman* 188-218). According to this critic, "countries must regulate the development and use of technology politically, setting up institutions that will discriminate between those technological advances that promote human flourishing, and those that pose a threat to human dignity and well-being" (182). Rather than banning whole procedures such as preimplantation genetic diagnosis and screening, the government should draw, according to Fukuyama, "red lines" within the "range of possible uses to distinguish between what

[13] "What will you have done to your newborn when you have installed into the nucleus of every one of her billions of cells a purchased code that will pump out proteins designed to change her?," McKibben wonders. "You will have robbed her of the last possible chance of understanding her life. Say she finds herself, at the age of sixteen, unaccountably happy. Is it *her* being happy—finding, perhaps, the boy she will first love—or is it the corporate product inserted within her when she was a small nest of cells, an artificial chromosome now causing her body to produce more serotonin?" (McKibben 48-9; emphasis in the original).

[14] McKibben fears that should germline genetic engineering begin to be used in society, it could "set off a kind of biological arms race" (34). He then quotes MIT economist Lester Thurow, who points out: "Suppose parents could add thirty points to their child's IQ? . . . "Wouldn't you want to do it? And if you don't, your child will be the stupidest in the neighborhood" (Thurow 33, qtd. in McKibben 34). Similarly, Fukuyama makes the following claim: "If we start transforming ourselves into something superior, what rights will these enhanced creatures claim, and what rights will they possess when compared to those left behind? If some move ahead, can anyone afford not to follow?" ("Transhumanism").

is legitimate and what is illegitimate." Thus, while therapeutic uses of biotechnology should be promoted, governments should put restrictions on enhancement uses (208).

In *Enough: Genetic Engineering and the End of Human Nature*, McKibben points to the fast pace at which the new technologies develop. McKibben refers to these technologies as "*science* visions" and claims that only "with some other vision. With some other account of who we are, and what we might be" we may head them off (111; emphasis in the original). In an interview with Alec Michod, Powers stresses the important role played by fiction in this respect. According to the writer, it is only through fiction that human beings may reach certain "kinds of knowing." Thus, while nonfiction "can assert," fiction "can show asserters, and show what happens when assertions crash." In other words, fiction can compare and contrast different worldviews, perspectives, or agendas, "linking beliefs to their believers, reflecting facts through their interpreters and interpreters through their facts." Ultimately, the writer describes fiction as a kind of "relational work" that can capture "the way that we and our worlds create each other." In relation to the new technological developments in the field of genetics and genetic engineering, Powers makes the following claim:

> A chemist can say how atoms bond. A molecular biologist can say how a mutagen disrupts a chemical bond and causes a mutation. A geneticist can identify a mutation and develop a working screen for it. Clergy and ethicists can debate the social consequences of pre-implantation genetic diagnosis. A journalist can interview two parents in a Chicago suburb who are wrestling with their faith while seeking to bear a child free of inheritable disease.[15] But only a novelist can put all these actors and dozens more into the shared story they all tell, and make that story rearrange some readers' viscera. (qtd. in Michod)

This quotation makes it evident that, although the interview took place in 2007—two years before the publication of *Generosity*—Powers was at that time already thinking through some of the ideas he would later on fictionalize in *Generosity*. When reading the novel, readers realize that, like some of the above-mentioned critics, Powers is very much concerned with the ethical challenges raised by the use of biotechnology for enhancement purposes. Even if the writer explores in *Generosity* the promises of increasing human happiness levels through biotechnology, he ultimately aligns himself with those critics

[15] This idea becomes, in fact, fictionalized in *Generosity*, as hinted earlier in this chapter.

who argue against the use of technology to create a happier population. The narrative strategies used by Powers to this purpose are explored in detail in the following sections.

2.3. *GENEROSITY: AN ENHANCEMENT* FROM THE PERSPECTIVE OF CRITICAL POSTHUMANISM

2.3.1. Thomas Kurton's transhumanist discourse

As noted earlier, the narrative of *Generosity* combines two parallel narrative strands that converge in part three of the novel, when the genomicist Thomas Kurton learns about Thassa's story. Each strand shows some particular narrative strategies, and the contrast between the strategies used in each strand gives readers the key to understanding the message of the novel. This section focuses on the ways in which the transhumanist discourse on the possibilities opened up by the use of biotechnology for enhancement purposes is introduced in the sections dealing with Kurton and the *Over the Limit* show. In addition, it also evaluates how the novel draws our attention to the ongoing process of construction and manipulation to which this discourse is subjected. The following section will, in turn, analyze the metafictional techniques used by Powers to further dismantle this discourse in the other narrative strand—the one that revolves around Russell and Thassa.

The character of Thomas Kurton, who is described in the story as the quintessential transhumanist, plays a key role in familiarizing readers with transhumanist philosophy. Power uses three main ways to introduce the genomicist's views on the pertinence of using technology to enhance the human condition. Firstly, by means of the literary reproduction of Kurton's interventions in the *Over the Limit* show and his dialogues on and off-camera with the host of the show. Secondly, by means of the literary reproduction of a public dialogue in which the genomicist discusses the promises and perils of genetic enhancement with a Nobel Prize-winning novelist. Thirdly, through some quotations by well-known philosophers of which the genomicist makes use in his everyday life and which are introduced at several points throughout the story. The sections that revolve around Kurton are scattered throughout the narrative and interspersed with the other narrative strand. Apparently, these sections are not arranged following any particular pattern, and are separated from the sections dealing with Thassa and Russell by means of a series of infinity symbols. They tend to be brief sections (most of the time they are only one or two pages long) and, even when two or three of these

sections appear consecutively, their total length does not exceed ten pages. This ultimately gives rise to a highly fragmented narrative that seems to mirror the double helix structure of DNA—a formal arrangement of which Powers had already made use, as Domestico sharply points out, in *The Gold Bug Variations* (35).[16]

Therefore, one of the ways by which Powers introduces readers to Kurton's transhumanist thoughts and lifestyle is through the literary reproduction of both the genomicist's interventions in the *Over the Limit* show and his conversations on camera with the host of the show, as well as by describing some of the show's editing techniques. The *Over the Limit* show, readers learn, is a science talk show that has been running for four years. Its host is Tonia Schiff, a "clear-eyed, unflappable skeptic" TV presenter who invests great efforts in trying "to compile an accurate map of the present at the scale of one to one, a massive mosaic of thumbnails of the blinding future" (Powers *Generosity* 65). It is precisely "[h]er arched-eyebrow amusement at the constant torrents of techno-novelty" that has made the show so popular. Each episode of the show focuses on one specific technological development that promises to alter radically human life and culture. Thus, "off-the-shelf electronic surveillance," "geisha bots," "Augmented Cognition weapons systems," "drugs that eliminate the need for sleep," and "untraceable performance enhancers" (62) are all themes tackled in previous episodes of the *Over the Limit* show. The episode which is reproduced in the novel and in which Kurton features as an invited guest is called "The Genie and the Genome," and deals, as its name suggests, with genetic enhancement.

Thanks to a heterodiegetic omniscient narrator that reproduces Schiff and Kurton's interventions at the show, readers learn that, as happens with many transhumanists in contemporary society, the genomicist hopes he will someday achieve immortality. Thus, when Tonia Schiff asks Kurton on camera if he really means to live forever, he acknowledges to be "on calorie restriction, daily workout, and a few

[16] *Generosity* and *The Gold Bug Variations* are not the only novels that mirror the DNA structure. Remarkably, Michelle N. Huang has pointed to Chinese Canadian author Larissa Lai's *Salt Fish Girl* (2002) as a novel whose formal design makes it stand out from other novels dealing with symbiogenesis—which she describes as "a specific type of incorporative symbiosis (long-term relationships between different species) that is the primary mechanism that generates new organs, tissues, and even species" (121). According to Huang, *Salt Fish Girl* shows a "molecular aesthetics," that is, a kind of formal design which simulates the double helix of DNA structure and which has the effect of triangulating "both past histories and future possibilities to dislocate the present" (121-123; see also Calvo-Pascual 406).

supplements, especially megadoses of resveratrol" (Powers *Generosity* 59).[17] His aim is to try to keep himself "healthy for another twenty years" (59), the time when, according to him, new technologies to overcome death will have been developed. Furthermore, through the narrator's literary reproduction of a "close-up of his right wrist," readers learn that Kurton wears, in case something goes wrong, "a red medical-alert bracelet." It gives instructions to those who find his dead body "to act quickly, administer calcium blockers and blood thinner, pack his corpse in ice water, balance its pH, and call the 800 number of a firm that will helicopter in paramedics to begin cryonic suspension" (23).[18]

Furthermore, in the first extract from the "The Genie and the Genome" episode that is reproduced in the novel, the genomicist addresses the watchers of the show and expresses his conviction that human beings should take control of nature and enhance themselves to reach the posthuman stage of evolution. To use his own words: "Enhancement. Why shouldn't we make ourselves better than we are now? We're incomplete. Why leave something as fabulous as life up to chance?" (Powers *Generosity* 19). According to Kurton, exploring and transcending our human limitations is not something new but something our ancestors have been doing for a long time. As he puts it: "[W]e've been remaking ourselves for ten thousand years. Every moment of our lives, we do something that some previous incarnation of humanity would consider godly. We simply can't know our upper limits. All we can do is keep exploring them" (23).

Similarly, at the very beginning of part two of the novel, the heterodiegetic narrator reproduces some extracts of a talk Kurton gave at "The Future of Aging" conference at the University of Tokyo, which have been included in "The Genie and the Genome" episode. Echoing the words used by Aubrey de Grey, a well-known advocate

---

[17] Resveratrol is a kind of natural phenol or acid organic compound produced by some plants as a defense mechanism against injury or attacks by bacteria, fungi, and other pathogens. It is hold in great esteem by contemporary transhumanists for its alleged antioxidant effects and often used as a dietary supplement. Remarkably, *The Transhumanist Handbook* (2019) includes a chapter entitled "Pragmatic Paths in Transhumanism" in which transhumanist consultant Jeffrey Zilahy offers advice on some "*transhumanist habits*" which can easily be adopted by the population "*to live longer and healthier lives*" (608; emphasis in the original). Resveratrol features, along with curcumin, quercetin, and other substances, as one of the "chemicals and compounds that have proven capabilities in slowing or even reversing the harmful effects of aging" (Zilahy 609).

[18] Similarly, the cryonics company Alcor Life Extension Foundation provides its new members with a stainless-steel ID bracelet and necklace with their "member identification number and emergency instructions engraved upon them." Alcor members are expected to wear them "at all times in case of medical emergency or clinical death" ("Membership FAQ").

of transhumanism in contemporary society, Kurton describes ageing as "not just a disease" but "the mother of all maladies." Then, he expresses his belief that human beings might finally "have a shot at curing it" (Powers *Generosity* 57) and even claims that putting an end to ageing could help eradicate many other illnesses. "Cure age, and you beat a dozen ailments at once. You might even help depression" (58), the genomicist tells the audience at the conference. In this last respect, towards the end of "The Genie and the Genome" episode, the recording of which Russell and Candace watch in the latter's apartment at the beginning of part four of the novel, Kurton claims to be convinced that technology will soon allow human beings to "hunt down and wipe out misery" (190) and, therefore, achieve happiness.

As stated above, a second way by which readers learn about Kurton's transhumanist views is through the narrator's reproduction of an event in which the fictional genomicist and an anonymous Nobel Prize-winning novelist engage in a public dialogue on the promises and perils of genetic enhancement. The event, reproduced towards the beginning of part three of the novel, in between the reproduction of the above-mentioned extracts of the *Over the Limit* show, takes place in Hyde Park, Chicago, and its relevance lies in the fact that it gives Russell, Candace, and Thassa the chance to meet the renowned genomicist in person. The event is advertised as "a dialogue between the Two Cultures." However, it seems to be, according to the narrator, more of "a cross between celebrity gawk and gladiatorial combat" (Powers *Generosity* 137). The genomicist mentions some of the illnesses that have so far been eradicated by means of biotechnology: "We've cured smallpox; we've done away with polio" (140). He then goes one step further and suggests that, apart from being used therapeutically, biotechnology should also be put to the service of enhancing the human condition: "Of course we want to eliminate the toxic molecular sequences that predispose us to suffering, whether cystic fibrosis, Alzheimer's, or heart disease. And if we can prevent the harmful, why not promote the helpful?" (140-41). The novelist's argument, by contrast, goes in the opposite direction. According to him, "genetic enhancement represents the end of human nature" (139).[19]

The last way in which Kurton's transhumanist ideas are presented in the story is by means of the narrative introduction of some quotations of which the genomicist makes

[19] The novelist's argument matches, paradoxically, the title (and the thesis statement) of Bill McKibben's work *Enough: Genetic Engineering and the End of Human Nature*, published in 2004.

use in his everyday life and which match well with his transhumanist way of thinking. Hence, readers find intertextual references to Joseph Priestley and Pierre Teilhard de Chardin, two philosophers who, in the eighteenth and twentieth century respectively, set out to reconcile science and religion. Anticipating some current transhumanist ideas, both thinkers agreed on the fact that human beings should take nature in their own hands and transcend their human limitations. Apparently, by quoting from these notorious philosophers, Kurton tries to assert the value of his transhumanist way of thinking. Thus, in the second extract from "The Genie and the Genome" episode that is reproduced in the novel, Tonia Schiff reads to the audience of the *Over the Limit* show a quotation from Teilhard de Chardin written on Kurton's notebook. The quotation, which Kurton carries around with him and claims to be his mantra, reads: "*Our duty, as men and women, is to proceed as if limits to our ability did not exist. We are collaborators in creation*" (Powers *Generosity* 24; emphasis in the original). Furthermore, towards the end of part two of the novel readers learn that Kurton's email signature features a quotation from Priestley which reads: "*...whatever was the beginning of this world, the end will be glorious and paradisiacal, beyond what our imaginations can now conceive*" (129; emphasis in the original).

If readers do not manage to identify with Kurton's transhumanist discourse—in spite of his constant attempts at enlightening us—it is, to a large extent, because Powers also introduces some passages which give us hints of how the genomicist and the mass media actively construct and manipulate this discourse. A clear example of it can be found towards the beginning of part three of the novel. In a brief two-paragraph section that precedes the above-mentioned public dialogue between the fictional genomicist and the Nobel Prize-winning novelist, the narrator locates Kurton flying first class from Boston to Chicago. Thus, readers learn that, before takeoff, one of the flight attendants welcomes the passengers of the flight with the following announcement: "*Good afternoon, ladies and gentlemen. Welcome to American flight 1803 from Boston to Chicago. If Chicago is not in your travel plans today, now might be a good time to deplane*" (Powers *Generosity* 137; emphasis in the original). Kurton, who is coincidentally preparing for the talk with the Nobel novelist and "searching for a good hook," finds the announcement genuinely funny and quickly adapts it to meet his own needs, scribbling the following sentence in his notebook: "*If the future is not your destination, now might be a good time to disembark*" (137; emphasis in the original). Remarkably, the narrator reveals that this is

not the first time the fictional genomicist builds on "random assortment and selection" to coin his transhumanist catchphrases (137).[20] By including this section just before the reproduction of the debate between Kurton and the novelist, Powers incites readers to mistrust the genomicist's ideas.

Furthermore, the novel also shows how, in an attempt to gain support for his cause, the fictional genomicist sometimes over-emphasizes the role played by genetics in determining human happiness levels, even if he is aware of many other factors that contribute to it. Thus, towards the ending of part three, in a three-page extract in which the narrator reproduces the recording of the final cut of "The Genie and the Genome" episode, Kurton announces the results of the experiments that have been performed on Thassa. The Algerian has proved indeed to have the perfect allele combination or, to use Kurton's words, to belong to the group of the "natural athletes of emotion" (Powers *Generosity* 185). Straightaway, on camera, the skeptic conductor of the show, Tonia Schiff, lists all the familiar criticisms that stress the important role played by the environment. Kurton dismisses all these arguments by declaring that the happiness genes "affect the way we engage the environment in the first place" (186). Nevertheless, when Schiff asks him off-camera whether possessing more of the so-called happiness alleles amounts for a happier life, the genomicist shows a much less self-confident attitude:

> But the more of these alleles I have, the greater my joie de vivre?
> His face admits to complexities.
> We don't even say that. We've simply noted a correlation… (185-86)

Here, the contrast between the genomicist's attitude on and off camera may ultimately lead readers to question the veracity of his arguments and to adopt a more critical position.

The novel also censures the role played by the media in helping spread the transhumanist vision of happiness as the result of the right genetic coding and, therefore, as something that eventually can be genetically engineered.[21] Thus, in the midst of an

[20] Further proof of this is the fact that the genomicist concludes his intervention at the public debate with the novelist by making reference to a construction sign that he saw on his way from Chicago O'Hare airport to the city center which read: "Inconvenience is temporary; improvement is temporary" (Powers *Generosity* 140).

[21] In his autobiographical work *La vida en cuatro letras: Claves para entender la diversidad, la enfermedad y la felicidad* ("Life in Four Letters: Keys for Understanding Diversity, Illness, and Happiness"), Spanish Professor of biochemistry and molecular biology Carlos López-Otín also points to the existing complicity between transhumanists, important institutions, and the media (90-91).

extract of "The Genie and the Genome" episode that is reproduced in part two of the novel, the narrator points out that to make the show more attractive to the audience, its conductor often sees herself forced to downplay its scientific component. The aim would be to "erase all trace of the thousands of staff hours of research and make every twist of this script sound freshly improvised" (Powers *Generosity* 99). Furthermore, by means of giving readers access to Schiff's hesitations, as well as by reproducing her dialogues off-camera with the director of the *Over the Limit* show, Powers denounces the media's tendency to manipulate information and over-emphasize the role played by genetics in determining human happiness levels. In his article, Hamner also points to the important role played by Schiff in this respect, describing her as a "representative of popular media" who progressively realizes to what extent her show erases the ambiguities of its material (430). Thus, in part five of the novel, the *Over the Limit* crew gather to watch the rough first pass of the follow-up episode to "The Genie and the Genome." Schiff is outraged at finding that all the scenes that featured scientists refuting transhumanist arguments on the inheritability of happiness have been erased, and expresses her concern to the director of the show:

> You do realize this is total shit? . . . The way this has been cut, we are just fanning the unsubstantiated hype. If even one-tenth of this should turn out to be real, then we ought… Don't you think we should at least mention the challenges? We're still a science show, right? Don't you think we should restore some of those scenes with all the objecting researchers? (257).

To sum up, although Thomas Kurton's views on the appropriateness of enhancing the human condition through technology are introduced in the story by different means, readers may find it difficult to agree with his transhumanist discourse. This is partly due to the fact that Powers cunningly draws our attention to the different ways in which this discourse is constructed and manipulated by both the genomicist and the mass media. He does so in two different ways. On the one hand, by showing how Kurton randomly constructs his transhumanist catchphrases and downplays the role played by the environment in determining human happiness levels. On the other hand, by depicting a skeptic show conductor who, in order to make the contents of the show more attractive to the audience, sees herself forced to downplay its scientific component, and who regrets that the show offers a biased perspective on the inheritability of happiness. Nevertheless, this chapter argues that there is yet one more powerful way by which the writer denounces

the constructed character of the transhumanist narrative on the biotechnological pursuit of happiness, which is the use of metafiction, an issue explored in detail in the following sections. While some critics have already commented on the use of metafiction in *Generosity*, as has been explained in the first section of this chapter, a further, deeper analysis is still required, as it is by means of building a self-reflexive narrative that Powers most evidently puts forward his views on the use of biotechnology for enhancement purposes.

2.3.2. *Generosity*: *An Enhancement* as a metafictional novel

The term 'metafiction' was first used by North-American novelist William Gass in his 1970 essay "Philosophy and the Form of Fiction" to refer to those works of fiction which dealt with fiction itself. Similarly, in her seminal work *Narcissistic Narrative: The Metafictional Paradox* (1980)—one of the first critical studies to engage with the different kinds of self-reflexivity found in creative literature—Linda Hutcheon defined metafiction as "fiction about fiction—that is, fiction that includes within itself a commentary on its own narrative and/or linguistic identity" (1). Four years later, in the preface to the revised edition of the same work, Hutcheon provided a more comprehensive definition of the issue. Thus, she described metafiction as "fiction that is . . . in some dominant and constitutive way, self-referring or autorepresentational: it provides, within itself, a commentary on its own status as fiction and as language, and also on its own processes of production and reception" (xii). In her recent work *Discourse Deixis in Metafiction: The Language of Metanarration, Metalepsis and Disnarration* (2019), Andrea Macrae argues that it was between the 1950s and the 1980s, coinciding with the upsurge of postmodernism, that metafictional texts proliferated in Western literature. According to this critic, the socio-ideological conditions of the time instilled in the population

> a hyper-awareness of the self and her/his relation to reality and the other, a crisis of faith in enlightenment systems of rationalisation and totalisation, scepticism of histories and master-narratives, anxiety over the mediating role of consciousness, and philosophical questioning of the possibility of communication and a shared 'reality.' (5)

Macrae argues that this condition of hyper-awareness resulted in the upsurge of self-reflexive literature, a kind of literature which she describes, following the ideas of other

well-known theorists of metafiction,[22] as "the quintessential expression of postmodernism" (5-6).

Metafictional writing was also largely a reaction against realist writing. In her classic work *Metafiction: The Theory and Practice of Self-Conscious Fiction* (1984), Patricia Waugh argued that because "the materialist, positivist and empiricist world-view" on which realistic fiction was premised no longer existed, novelists had begun to question and discard the forms associated to that ordered reality. Thus, "the wellmade plot, chronological sequence, the authoritative omniscient author, the rational connection between what characters 'do' and what they 'are,' the causal connection between 'surface' details and the 'deep,' 'scientific laws' of existence" were notions that had come to be, according to Waugh, regarded with suspicion by writers of metafiction (7). Remarkably, as early as 1967, in his essay "The Literature of Exhaustion," John Barth had already claimed some of the notions of realist writing to be obsolete, more specifically "cause and effect, linear anecdote, characterization, authorial selection, arrangement, and interpretation" (72). Order, consistency, and linearity would in fact be replaced by "[d]isorder, randomness, and nonlinearity" in metafictional texts (Stoicheff 92).

While some definitions of metafiction, such as Gass's or Hutcheon's, concentrate mainly on the capability of metafictional texts to engage with fiction as a theme, other definitions give more emphasis to the potential of metafiction to draw the reader's attention to the fictionality of the reality outside the literary text. Thus, Waugh's definition, which is one of the most frequently quoted, points to metafiction as

> a term given to fictional writing which self-consciously and systematically draws attention to its status as an artefact in order to pose questions about the relationship between fiction and reality. In providing a critique of their own methods of construction, such writings not only examine the fundamental structures of narrative fiction, they also explore the possible fictionality of the world outside the literary fictional text. (2)

The coexistence of different definitions of metafiction testifies to the existence of different kinds of metafictional texts. In this respect, Waugh argues that metafictional novels can be sorted into three different groups, depending on their degree of engagement with the real world. On one end of the spectrum we find texts that just explore fictionality

[22] In the preface to the revised edition of *Narcissistic Narrative: The Metafictional Paradox*, Hutcheon already claimed "the formal and thematic self-consciousness of metafiction" to be "paradigmatic of most of the cultural forms of . . . our 'postmodern' world" (xii).

as a theme (18). On the opposite end we find novels that suggest the world to be "a fabrication of competing semiotic systems" (19).

While there may be some texts that deal mainly with fiction as a theme for the sake of it, a good number of metafictional texts engage, to a larger or lesser extent, with the world outside the text. Most theorists of metafiction agree that one of the main functions of metafiction is precisely calling the reader's attention to the fact that reality is as much of a construction as a literary text is. In *Metafiction*, Waugh takes Peter L. Berger and Thomas Luckman's ideas as her point of departure. Adopting a sociological perspective, these two critics set out to demonstrate in their work *The Social Construction of Reality* (1971) that the prevailing concept of reality is socially constructed. According to them, reality is not something that is just "given" but something that is manufactured or, to use their own words, "produced by the interrelationship of apparently 'objective facticities' in the world with social convention and personal or interpersonal vision" (51). Elaborating on their ideas, Waugh argues that metafictional texts problematize, from a theoretical or philosophical perspective, the reader's sense of reality. Thus, readers are incited to revise their views on the philosophical status of what they assume to be reality (34). In a similar vein, in *Narcissistic Narrative* (1980), Hutcheon identifies a challenge for the writers of narcissistic or self-reflexive fiction. According to this critic, these writers need to establish new connections between their art and their readers' lives by inciting them to re-examine and re-evaluate their relationship to both the text and the world outside it (140).

Both Waugh's and Hutcheon's ideas give us hints of the important role played by the reader of metafictional texts. This is an issue that has also been explored by some theorists of metafiction and, perhaps more prominently, by Hutcheon herself. As this critic argues in *Narcissistic Narrative* (1980), for the reader of metafiction, reading is no longer a "safe, comfortable, unproblematic" experience (99). Rather, metafictional texts often demand the reader to engage actively in the process of reading and decoding the fictional work (39), which may even become an unsettling, challenging, or even threatening experience (151). Thus, the reader is very often disturbed, pushed out of his comfort zone at realizing that he is caught in a paradoxical position. On the one hand, he sees himself "forced by the text to acknowledge the fictionality he too is creating." On the other hand, "his very participation involves him intellectually, creatively, and perhaps even affectively in a human act that is very real, that is, in fact, a kind of metaphor of his

daily efforts to 'make sense' of experience" (30). Although Hutcheon acknowledges that the reader of metafiction is granted considerable freedom to create meaning, she also claims that this does not mean that the author completely gives up control over his creation. Rather, the writer still "retains some control," as he or she is ultimately the one that designs the codes, rules, and conventions that underlie the production of the text and, therefore, the one who guides the reader in the process of creating literary meaning (152).

As hinted at above, metafictional texts are different from other kinds of texts in that they draw the reader's attention to (and provide a critique of) their own processes of construction. This "self-consciousness about language, literary form and the act of writing fictions" responds, according to Waugh, to a crisis in the novel tradition (2). Once fictional conventions have become "both automatized and inauthentic," readers are in need of a self-conscious fiction that defamiliarizes these conventions and releases "new and more authentic forms." By making use of parody, Waugh continues, writers of metafiction try precisely to break those norms that have become too commonplace (65). In *Narcissistic Narrative* (1980), Hutcheon defines parody as "an exploration of difference and similarity" and argues that parody invites readers to be more attuned to the literary codes used in the work. Nevertheless, she argues, parody does not only entail mockery, ridicule, or destruction. Rather, in metafiction it is a necessary step towards building "a new form which is just as serious and valid, as a synthesis, as the form it dialectically attempts to surpass" (25). Similarly, Waugh claims that, in spite of what some critics may argue, parody in metafiction "is more than a joke." It is indeed a method of displacement and substitution which entails an implied critical function (78).

More recently, some critics and writers have claimed that the rule-breaking impulse typical of metafiction has nowadays become too commonplace to be meaningful. In an interview with Larry McCaffery, North-American writer David Foster Wallace claimed that the self-consciousness, the irony, and the anarchism adopted by earlier writers of metafiction, such as John Barth, Robert Coover, Vladimir Nabokov, William S. Burroughs, or Thomas Pynchon, served "valuable purposes," politically and historically speaking (qtd. in McCaffery 48). Then Wallace pointed to the existence of a new generation of writers who had inherited the formal experimentation initiated by modernist and early postmodernist writers but who, regrettably, had lost all sense of purpose (qtd. in McCaffery 27). Wallace metaphorically referred to these writers as "the crank-turners," the ones who "take the machines others have built and just turn the crank,

and little pellets of metafiction come out the other end" (qtd. in McCaffery 30). According to Wallace, the problem was that what this second generation of writers had inherited from "the postmodern heyday" was "sarcasm, cynicism, a manic ennui, suspicion of all authority, suspicion of all constraints on conduct, and a terrible penchant for ironic diagnosis of unpleasantness" rather than a determination not just to "diagnose and ridicule" but also to "redeem" (qtd. in McCaffery 49). However, in order for metafictional rule-breaking to be effective, Wallace openly argued that it needs to have a purpose or "to be for the *sake* of something" (qtd. in McCaffery 27; emphasis in the original).

Powers published his novel *Generosity* in 2009, decades after the heyday of postmodernism and the proliferation of metafictional writing. At a time when metafiction had come to be regarded by some as outworn tradition, his choice to write a metafictional novel to deal with the promises and perils of the biotechnological pursuit of happiness may at first seem striking. Drawing from Hutcheon and Waugh's seminal works on metafiction, this section provides an in-depth analysis of the different metafictional techniques used by Powers in *Generosity*. Ultimately, it aims to prove that Powers's choice, contrary to what some reviewers argue, may be most appropriate. More specifically, this section argues that by making use of some narrative strategies which are typical of metafiction, Powers denounces the constructedness of the transhumanist narrative, and more specifically, of the transhumanist discourse on the biotechnological pursuit of happiness. Accordingly, Powers presents instead an alternative view of happiness as something human beings need to achieve rather than an engineering problem.

2.3.2.1. Self-conscious foregrounding of the fictional world artifice

According to Waugh, one of the distinctive features of metafictional novels is that they particularly emphasize the role of the "author" in inventing the story or, to use her own words, they "exaggerate authorial presence in relation to story or information." In clear contrast to what happens with realist omniscient narratives, in which the fictional and the real are paradoxically bound together, in metafictional texts we often find a narrator—who may or may not represent the persona of the real author—who "steps into the fictional world, crosses the ontological divide" and comments not only on the contents of the story but also on its process of construction and narration (131). Thus, metafictional works often show narrators which are not characters in the story world but which

explicitly intrude in it to show its artificiality, a mode of narration which allows, according to Waugh, "for metafictional dislocation much more obviously than first-person narratives" (133). As hinted at above, by laying bare the text's process of construction, metafictional texts direct the reader's attention, in turn, to the world outside the text, calling their attention to how the meanings and values of our own world may also have been manufactured and how, consequently, they may be challenged or changed (34).

In *Generosity*—and most prominently in the sections that revolve around Thassa and Russell—we find a narrative occasionally interrupted by the comments of a self-conscious, unreliable, and apparently non-participant or heterodiegetic narrator who comments on the contents of the diegesis or story world as well as on its process of construction and narration. As hinted at above, these sections are interspersed with the sections in which Kurton puts forward his transhumanist discourse on the appropriateness of using technology to enhance the human condition, giving rise to a highly fragmented narrative that mirrors the double helix structure of DNA. As this section sets out to prove, it is precisely the self-reflexive nature of the narrative in the sections dealing with Russell and Thassa—achieved mainly by the introduction of constant references to its process of composition and the occasional undermining of the truthfulness of the events described—that indirectly calls the reader's attention to the constructed character of Kurton's unwavering transhumanist discourse in the other narrative strand. By extension, then, it calls the reader's attention to the constructedness of contemporary transhumanist discourses on the technological enhancement of the human condition.

Therefore, the narrator of *Generosity* introduces in the sections that revolve around Russell and Thassa different metafictional references to the process of construction of the text. These references enhance readers' sense that we are reading a fictional narrative crafted by an author, ultimately drawing our attention to the craftedness of Kurton's transhumanist discourse. Towards the very beginning of *Generosity*, the extradiegetic narrator intrudes upon the diegesis with an overt comment that lays bare the act of composition of the narrative: "I give myself a first assignment: Russell Stone in one hundred and fifty words. Start with this: His earliest crime involved a book about a boy whose marvelous scribbling comes alive. . . . He hates books with teacher protagonists. He avoids stories set in any school. . . . He dreads the question *What music do you listen to?*" (Powers *Generosity* 12; emphasis in the original). By assigning himself

the task to describe his character in a certain number of words, as well as by making a list of all the things he should include in his description, the narrator exposes the act of composition and, consequently, the fictional condition of the discourse.

Furthermore, on other occasions the narrator of *Generosity* explicitly acknowledges his role as the imaginative creator of the story, which further highlights the fictionality of the diegesis. Perhaps, the clearest example of this is when he depicts the TV presenter Tonia Schiff as a puppet whose destiny ultimately depends on his authorial choices. Hence, at some point in part two of the novel the narrator asks readers to "[f]orgive one more massive jump cut" and points out that the "next frame doesn't start until two years on." He then predicts that, two years after the filming of "The Genie and the Genome" episode, Schiff "will find herself on a warehouse-sized plane flying east above the Arctic Circle," on her way to North Africa (Powers *Generosity* 79). The aim of her trip will be, readers learn, to travel to Thassa's homeland "to weave a sequel" to "The Genie and the Genome" episode of the *Over the Limit* show (80). Here, the use of references to different film editing devices, together with the use of the future tense, enhance the reader's sense that the narrator is ultimately in control of what happens to his character. Also revelatory in this respect is the fact that, while Schiff is on the plane, the narrator ultimately controls her movements: "*I have her* flip up her window slide and look out the plastic portal" (80; my emphasis). Later on, once she is in the Maghreb drinking coffee with Thassa, the narrator still controls her behavior. "*I slow her down*, let her come into her film the back way, through the suq of endless negotiation" (291; my emphasis). In these last two examples, it is by means of using the first-person pronoun that the narrator asserts his authorial control over the diegesis.

Nevertheless, the narrator acknowledges in several occasions that he is not in control of his characters' behavior or the development of his story. Thus, there are times when he suggests that he is not responsible for the invention of some of the personal information regarding his characters. Referring to Thassa, the narrator states towards the beginning of the story: "She's twenty-three, *it turns out*, give or take an era" (Powers *Generosity* 26; my emphasis). Similarly, referring to Russell, he claims: "Stone *strikes me* as the kind of guy who might not know what his pleasures are" (38; my emphasis). Other times, he claims to be just a mere spectator of his characters' actions: "*I watch him* twist, the way he did so often in real life" (96; my emphasis), the narrator declares at some point, also referring to Russell. Later on, he states: "*I watch* to see how Candace Weld

can respond to this news" (273; my emphasis), referring to the news that Thassa and Russell have both disappeared. At some points, the narrator even claims that his characters behave in unexpected ways. Thus, referring to Thassa and "her two self-appointed foster guardians"—that is, Russell and Candace—the narrator states at some point: "I'd dearly love to keep all three tucked away safely in exposition. But they've broken out now, *despite me*, into rising action" (109; my emphasis).

Even Candace, a character who Russell believed would always remain under his control, seems to be breaking out: "I always knew I'd lose my nerve in the end. Kurton set free by his data; Thassa turning brittle; Stone an easy mark in the crosshairs of love. Now Candace, . . . *I thought she would be my mainstay, and now she's breaking*" (Powers *Generosity* 227; my emphasis). Ultimately, the story itself seems to be developing in ways contrary to his intentions, as can be observed in the following quotation:

> *I want the story to stay there*, to develop this conflicted, tragically flawed character: collective wisdom. *Instead, "The Genie and the Genome" squids off into a wholly unnecessary subplot* concerning a healthy middle-class Chicago suburban couple who used preimplantation genetic diagnosis to keep their daughter from inheriting the colon cancer that has ravaged her father's family. (101; my emphasis)

Although in the last three examples the narrator shows himself slightly concerned about his lack of control over his characters and his story, most of the time he expresses his unwillingness to be the mastermind behind the story. This becomes obvious, for example, when he claims to be "deciding too much, again" (13) while presenting Russell to the readers, towards the beginning of the novel, or when he claims not to know how Thassa feels, close to the ending of the novel: "And how does she feel, in the teeth of the evidence? I can't yet see. I look closer, the whole point of having been out anywhere tonight. I look, *and try to decide no more than God*" (294; my emphasis). Whether asserting his authorial control or claiming no responsibility for what happens to his characters or for how his story develops, the narrator ultimately manages to break the reader's willing suspension of disbelief through the introduction of different references to the process of composition of the text. Thus, he enhances our sense that we are reading a fictional narrative that has been crafted by an author.

As well as commenting on the process of construction of the story, in the sections that revolve around Russell and Thassa the narrator sometimes calls into question the truthfulness of the events described and, therefore, his own reliability as narrator. To this

purpose, he makes use, on the one hand, of 'denarration,' a narrative strategy which, according to narrative theory critic Brian Richardson, appears frequently in late modern and postmodern texts (168). Drawing on literary theorist Gerald J. Prince's ideas on 'disnarration,' Richardson argues that denarration involves the narrator's denial of some aspects of his or her own narrative, which had previously been presented as given (168-69). According to Richardson, denarration often destabilizes the ontological stability of the diegesis and disrupts, in turn, the reliability of the narrative voice (171-73).

An example of the use of denarration can be traced in the first pages of the novel. After getting out of the subway at Roosevelt station, Russell walks to the Mesquakie College of Art, where he is about to teach his first Journal and Journey class. Along the way, he is "hit by the downtown's stagecraft" (Powers *Generosity* 5). From "glass towers with their semaphores of light he's too close to read," to a skyline that "mounts up in stunning ziggurats" and "a sliver of lakefront," Russell is mesmerized by the sight, his heart pumping "at the blazing panorama" (5). Nevertheless, once Russell reaches the Mesquakie College of Art, the narrator declares, in a separate paragraph:

> No, you're right: those streets don't really run that way. That neighborhood is a little off. The college isn't quite there; it's not *that* college.
> This place is some other Second City. This Chicago is Chicago's in vitro daughter, genetically modified for more flexibility. And these words are not journalism. Only journey. (6; emphasis in the original)

In this quotation, the narrator directly addresses the reader—also a typical feature of metafiction, as will be explained later in more detail—and denies the ontological status of the setting he has just described. Remarkably, readers learn that the action takes place not in the city of Chicago itself, which the narrator has apparently been trying to describe thus far, but in a "genetically modified" version of it, "for more flexibility." By making use of denarration the narrator puts explicitly into question his own reliability as well as that of his narrative.

Another way in which the narrator calls into question the truthfulness of his narrative is by referring to some of the events that happen in the story using the term 'scene.' Thus, the narrator states at some point: "There's *the scene* where Stone asks Thassa to stay after class. As if he wants to talk to her about her course writing" (Powers *Generosity* 77; my emphasis). "Then comes the next classroom *scene*," he points out some pages later (81; my emphasis). Later on, he claims: "The security guard stops him in the

lobby, flanked by two policemen. Someone has invented *the scene* just to create rising action" (104; my emphasis). Because the term scene is more frequently used to describe fictional events, its use here problematizes the truthfulness of the events described. Ultimately, by inciting readers to call into question the truthfulness of his story and his own reliability, the narrator further enhances the artificial, constructed nature of his narrative.

Overall, the narrator of *Generosity* is a highly self-conscious voice who comments on the process of composition of his story, at times acknowledging, at times denying his role as the imaginative invention behind the story, and sometimes even problematizing the truthfulness of the events described. Significantly, the narrator's metafictional commentary is scattered throughout the sections that revolve around Russell and Thassa, which are, in turn, interspersed with the sections in which Kurton puts forward his transhumanist discourse on the pertinence of enhancing the human condition through technology. These metafictional strategies contrast with the omniscient and unwavering narration prevalent in the second narrative strand. In this second strand, the narrator reproduces, as explained in previous sections, the words of a genomicist who erases any trace of the construction and manipulation of his transhumanist discourse. It is precisely this contrast between the two narrative modes that may ultimately awaken the reader to the constructed character of Kurton's transhumanist narrative. By extension, it may also draw our attention to the fragile grounds and even fictional character on which stand contemporary transhumanist discourses about the biotechnological enhancement of the human condition. Thus, we may understand the ideological reason why the narrator of *Generosity* is making up a story while also acknowledging its fictionality and, at times, even questioning its accuracy. By contrast, Kurton—and, by extension, contemporary transhumanists—are putting forward a fake narrative on the inheritability of happiness and the pertinence of putting biotechnology at the service of creating happier human beings and trying to pass it as truth.

2.3.2.2. Explicit narratorial address of the reader

Another technique that is widely used by writers of metafiction to draw attention to the fictionality of the world outside the literary text is explicit narratorial addresses to the reader. Drawing on Gerard Genette's classic study of metalepsis, Macrae describes this technique as a variety of metaleptic communication. According to this critic, metaleptic

communication often involves characters in the diegesis addressing either an extradiegetic narrator or the reader, or extradiegetic narrators addressing diegetic characters or, in some cases, intradiegetic character-narrators or extradiegetic narrators addressing the reader (121). In *Generosity*, we can find several instances of the narrator directly addressing the reader. Most frequently, the narrator expresses his awareness of the reader's familiarity with the story he is narrating and the way it is going to develop. This is most obvious in the parts dealing with Thassa's fate after her teacher brings her into the spotlight and the genomicist finds out about her. Hence, in part two of the novel, Russell, Thassa, and Candace—the college psychologist—meet by chance after one of the Journal and Journey classes. This is the first time Candace and Thassa meet. Some days earlier, in an appointment with the psychologist, Russell had expressed his concern with his student's emotional condition. Upon meeting the Algerian, Candace is bewildered at finding that she seems to be indeed ridiculously happy. Once Thassa has left, the psychologist tells Russell: "That's what we in the mental health business call peak experience. And you're saying she's like that *all the time*?" (Powers *Generosity* 86-87; emphasis in the original).

In the following paragraph, the narrator recounts how Candace and Russell shake hands and part. Then, addressing readers, the narrator states:

> He knows this story. *You* know this story: Thassa will be taken away from him. Other interests will lay claim. His charge will become public property. He might have kept quiet and learned from her, captured her in his journal. . . . But he's doomed himself by calling in the expert. It's his own fault, for thinking that Thassa's joy must mean something, for imagining that such a plot has to go somewhere, that something has to happen. (Powers *Generosity* 87; emphasis in the original)

In this quotation, the narrator refers to Russell and his mistake to think that Thassa may be suffering from a condition, which leads him to consult the college counselor, raising the latter's interest on his student and, consequently, prompting the Algerian's unfortunate finale.[23] By directly addressing the narratee and ultimately his readers with the second-person pronoun "you" and pointing to their ability to anticipate Thassa's fate, the metafictional narrator conveys a sense of inevitability: once she becomes the subject

[23] Another event that is key in this respect is when, upon being interrogated after the frustrated rape attempt, Russell feels the moral obligation to tell the police that his student could suffer from hyperthymia, or an excess of happiness. The possibility that Thassa may be hyperthymic captivates the media's attention, which leads to her eventual demise close to the end of the novel.

of scrutiny for a population that dreams of achieving eternal happiness, she is doomed. A similar example can be found later on, in part three of the novel. After having accepted Kurton's invitation to undergo some genetic tests, Thassa lands in Boston. At this point, the narrator declares: "You know the story in Boston. You know what the lab will have to discover" (148). This is yet another instance of the narrator directly addressing his readers and referring to their ability to guess Thassa's fate once she has fallen in the grips of the wicked transhumanists.

However, readers are able to predict the ill-fated course of the events not only due to the metafictional strategy of directly addressing the narratee. The sense of inevitability is largely conveyed in the language of hope and inevitability put forward by Kurton with the help of the media in the other narrative strand, which mirrors the language used by some transhumanist critics in contemporary society. Thus, in his interventions in both the *Over the Limit* show and the dialogue between the Two Cultures, the genomicist often presents the coming transhuman era as something inevitable. He believes that human beings are about to reach the posthuman stage of evolution and there is nothing that can be done to prevent it. At some point, the narrator states, focalizing through Kurton: "Nothing, really, can hurt science. All the Luddites in the country turning out with torches and pitchforks would succeed only in sending research abroad. Everything discoverable will be discovered; he'd bet his lab on that" (227-28).[24] As happens in the story, many contemporary transhumanist critics present the coming transhuman era as something inevitable. The title of UCLA philosopher Gregory Stock's 2002 work, *Redesigning Humans: Our Inevitable Genetic Future*, a work in which he embraces the possibilities opened up by germline genetic engineering, is revelatory in this respect. A similar language of inevitability has been used by other transhumanist critics such as Vernor Vinge, who in his paper "The Coming Technological Singularity" describes the singularity as the "*inevitable consequence* of the humans' natural competitiveness and the possibilities inherent in technology" (16; my emphasis).

[24] Remarkably, if Thassa accedes to being tested by Kurton's biotech company it is precisely because she regards the discovery of genetic links to happiness as something inevitable. As the narrator states, focalizing through the female protagonist: "If something interesting truly does coil up in her cells, someone will find it. If not Truecyte, then some other research group, private or public, will pinpoint whatever part of the secret of happiness lies hidden in her body. This decade or the next" (Powers *Generosity* 149).

As has been explained above, the narrator of *Generosity* directly addresses readers using the second-person pronoun "you" and points to our ability to predict Thassa's inescapable fate once she has fallen prey to the transhumanists. By doing this he indirectly draws our attention to the discourse of inevitability used by Kurton in the other narrative strand and, by extension, to the similar discourse put forward by those contemporary transhumanists who present the coming transhuman future as something unavoidable. Ultimately, readers may realize that, the same as Thassa's fate has been dictated by the transhumanists in the story—rather than by the narrator's own authorial choices—human beings run the risk of being dragged into the future of an unrestrained (bio)technological growth that a few optimistic transhumanist critics and thinkers in contemporary society have long been wishing for. In this way, the narrator reveals their transhumanist narrative of unhindered and inevitable technological progress to be nothing but a construction, which can, nevertheless, be challenged and even changed.

In a similar vein, some critics in contemporary society have denounced the technological determinism that seems to prevail in transhumanist circles. Thus, Fukuyama has claimed that being pessimistic about the inescapability of technological progress is pointless, and that this technological determinism could eventually turn into "a self-fulfilling prophecy if believed by too many people" (*Our Posthuman* 188). According to this critic, human beings should not regard themselves "as slaves to inevitable technological progress when that progress does not serve human ends." Referring to biotechnology more specifically, Fukuyama has stated that political communities should rather have the freedom to discern which uses of biotechnology protect and which do not protect the values they most dearly appreciate, and to act accordingly (218).

2.3.2.3. Alternative endings

In her seminal work, Waugh points out that metafictional novels may also end with a choice of endings. Alternatively, this kind of novels may even end with a discussion of "the impossibility of endings," or with a commentary on the standard fictional end, the happy ending (29). Regarding those novels that present the reader with two or more alternative endings, Waugh states that they often make use of contradiction. Thus, they provide readers with alternative stories that happen neither "*simultaneously* (because they can only be substitutions for each other)" nor "*in sequence* (because they cannot be

combined according to normal logic: they erase or cancel out each other)" (138; emphasis in the original). Ultimately, this kind of novels leave readers with no final certainty.

In *Generosity*, Powers provides his readers with two alternative, mutually exclusive endings for Thassa's story. The two endings appear, one after another, in part five of the novel. Ultimately, the narrator points to the validity of just one of them, the one that ends with Thassa taking her own life in the motel room. As this section aims to demonstrate, with this narrative choice, the narrator undermines the transhumanist discourse on the genetic basis of happiness and puts forward instead an alternative view of happiness. The first ending takes place sometime after "the happiness woman has signed away her eggs for $32,000" (Powers *Generosity* 249). In a phone call with Russell, Thassa claims to be overwhelmed by all the criticism she has received for her decision to sell her genetic material. "Did you know that total strangers want me dead? . . . Russell, I'm fed up with this," the Algerian announces (266).[25] Although she only has acceded to selling her eggs to help her family financially, to the eyes of "the vocal majority," she has "become something sinister." "How could this shining woman, the standard-bearer of bodily happiness, put such a price tag on her gift," many people wonder. According to some, what she should have done is freely "place it in the public domain" (250). In the face of this reality, Thassa asks her teacher to drive her to Canada, where her uncle and aunt live. Russell accedes and the two characters make their way north. Nevertheless, they are stopped at the border and told they need "a passport to get back into the States" (280). Because Russell does not have his passport with him and nobody in Montreal can come to pick Thassa up until the next morning, the two characters see themselves forced to spend the night at a nearby motel.

In the motel room, Russell is visited by a thought that "sits him up in bed" (Powers *Generosity* 282). It is worth mentioning here that earlier on, on their way to the border, Thassa had confessed making up some of the things she had included in her essays for the Journal and Journey course. Thus, Thassa's description of an old woman climbing up the stairs of the Cultural Center in Chicago, which had particularly stayed with Russell, had proven to be, to the latter's surprise, nothing but an invention (279). Back in the motel room, still mulling over about the fact that Thassa's beautiful essays were full of lies,

[25] After her unfortunate decision to sell her genetic material, some writers working for the comedy and entertainment company "National Lampoon, Inc." even create a humor site called "killthesmileyarabchick.com," which "spawns several more violent imitations" (Powers *Generosity* 251).

Russell starts to think that his student's cheerfulness could also be nothing but a façade: "Those essays are not her only fiction. She has been authoring something else. How high is her real emotional set point, by nature? How happy, is she, really? . . . Maybe she has faked a good half of her bliss" (282-83). Thassa's behavior at the motel confirms Russell's suspicions. The Algerian shows herself unprecedently apathetic and restless. Thus, when her hairbrush falls to the floor, she starts hyperventilating and sobbing and she expresses her wish to get out of that place: "Something's happening to me, Russell. I have to get out of this place" (283). At watching Thassa in such a state, Russell is also astounded: "He, too, is paralyzed, by a realization all his own. Maybe she doesn't have hyperthymia after all" (284).

At some point, Russell borrows Thassa's phone and steps outside the room to call Candace, who tells him that the two of them are "all over the news" and that he is being accused of kidnapping his student (Powers *Generosity* 286). Candace also informs Russell that the police have launched a manhunt for him and Thassa, which *Headline News* has labelled "The Pursuit of Happiness" (289). When Russell returns to the room, "the TV is blaring" and Thassa "asleep, curled up on her bed" (287). It does not take long until Russell finds out that his student has taken all the medicines in his Dopp kit: "Robert's Ativan. Russell's doxylamine. Old Darvons from a wisdom-tooth extraction he was saving for a rainy day. Every remedy his kit has to offer" (288).[26] He soon concludes that she must have watched the news headlines. At verifying that she is not breathing anymore, "art at last overtakes him," and he starts writing (288). However, he soon stops doing it, and dials instead the emergency number. While waiting for the doctors to come, he tries "to keep her as alert as possible." At some point, "briefly, her muscles take on a little tension" (289). When the helicopter comes, Thassa is strapped into a mobile sling bed, "her eyes open," readers learn, her gaze swimming "at random through the atmosphere, before snagging on Stone" (290). Strategically, the narrator's inconsistent narration of the events that take place at the motel room—one moment Thassa is not breathing anymore, the next moment she does show signs of being alive—ultimately

[26] The fact that some of the pills Thassa swallows to kill herself are mood enhancers shows Powers's warning irony. Also ironic is the fact that Russell starts working at the Mesquakie College of Art because the previous teacher is on sick leave after having "a bad episode with mood enhancers" (Powers *Generosity* 18).

leaves readers unsure of whether the main character is alive or dead. The narrator never informs whether the doctors are able to save Thassa's life either.

Told immediately after the first one, the second ending takes up the last seven pages of the novel to help Powers enhance his warning message about the transhumanist run for biotechnological bliss. Thus, he makes readers find there that two years after the release of "The Genie and the Genome" episode, Tonia Schiff meets with Thassa in a café of "a town just over the Tunisian border" (Powers *Generosity* 247). Therefore, they may guess that Thassa has survived her suicide attempt and has moved back to her home country. Schiff, on her part, has set out to film a documentary about "what happens next," that is, about "the coming age of molecular control." The documentary, entitled "The Child of Choice" (292), represents Schiff's last attempt at raising awareness among the population of the need to halt and reverse technological progress in the field of genetic engineering. As the narrator puts it: "Now Schiff herself wades into the middle of a fray that might just turn the moderate American citizen against any more discovery" (81). Remarkably, readers learn about Schiff's enterprise as early as in the second part of the novel, by means of a flashforward. Since then, and until the very ending of the novel, the narrator devotes some brief sections to describing Schiff's journey from the US to the Maghreb. These sections are interspersed in the main narrative, and are usually narrated in the future tense, as shown in the following example: "And on a May night in the near future, Tonia Schiff *will land* at Tunis-Carthage International" (133; my emphasis). As noted earlier, the use of the future tense can be interpreted as a strategy deployed by the narrator to assert his authorial control over the diegesis. Nevertheless, it can also be interpreted, together with the narrator's claim in one of these sections that Schiff's expedition to the Maghreb seems, for a moment, "almost plausible" (210), as a hint that this ending only happens in the narrator's imagination.

In any case, in the last seven pages of the novel, readers learn about the meeting that takes place between Thassa and the TV presenter. In this meeting, Schiff shows Thassa some images of "a brown infant girl" who has been born out of the Algerian's genetic material. The images, which also feature Thomas Kurton—"still successfully refuting his sixty years"—are to be included in "The Child of Choice" episode. However, while watching the images of the little girl squealing "in ecstasy" and breaking out "into gales of untouchable laughter," Powers makes Thassa show contradictory feelings: "Anxiety. Bliss. Other related strains" (Powers *Generosity* 293). Then, she gives Schiff

permission to include her in her documentary, hoping her story will help to influence an audience too confident about the inheritability of happiness: “Make your film. Tell everything. Tell them my genes had no cure that this place couldn’t break” (294). This last remark, together with the fact that Thassa tells Schiff that she cannot be filmed anymore—apparently, not because she refuses to be on TV but because she is dead, so it is ultimately impossible—are hints that also may lead readers to suspect that this second ending only takes place in the narrator’s imagination. The fact that the narrator then explicitly refers to Thassa as “the apparition,” and that Schiff’s camera, the menus, the tea, and “the filmmaker herself” (295) eventually start to vanish as the novel comes to a close are also hints that may lead readers to lean towards this interpretation.

Some critics have indeed suggested in their analyses of *Generosity* that Thassa’s story tragically ends with her suicide at the motel room and that the second ending is just the narrator’s posthumous and more optimistic rewriting of Thassa’s fortune (Piep 56; Ickstad 40; Schaefer 266). On the other hand, other critics have offered a different interpretation of the ending. Thus, Wood argues in his review of *Generosity* that even if Thassa attempts to commit suicide at the motel room, the final scene makes it evident that she is still alive, that she has managed to sell her eggs, and that a girl has been born with her same genetic predisposition to happiness. Going one step further, Hamner suggests that the narrator of *Generosity* refuses to confirm the validity of any of the two endings. Thus, quoting from the novel, this critic claims that Powers makes use of Russell’s creative writing book *Make Your Writing Come Alive* to remind readers that “denouement doesn’t mean tying up all your loose ends. Quite literally, it’s French for untying” (438). Even if the narrator does not openly assert the validity of any of the two endings, as hinted at above, he does include in the second ending some clues that may lead readers to believe that Thassa manages to commit suicide and that the second ending is just a creative rewriting of the first one. Even more enlightening in this respect is the narrator’s revelation, in this alternative ending, of his true identity.

At some point during Schiff and Thassa’s meeting at the café in the Maghreb, Schiff hands Thassa her beaten-up copy of the book *Make Your Writing Come Alive*, which Russell and his students had been using in the Journal and Journey classes. Thassa had carried the copy with her on her way to the Canadian border and, apparently, it was Russell who had kept it after his student’s tragic death. Now, it is Schiff who has been assigned the task of giving it back to Thassa. Nevertheless, Thassa refuses to keep it:

"'It's not mine,' she says. 'Give it to Russell. He will need this.'" Straight away, using the first person, the extradiegetic narrator addresses his character and declares: "I will need much more. Endless, what I'll need. But I'll take what I'm given, and go from there" (Powers *Generosity* 295). By providing an answer from his extradiegetic position to his character's remark using the first-person pronoun "I," the narrator finally reveals his identity and discovers his participation as a character in the story he has narrated. Suddenly, as hinted at above, things star to fade. Metaleptically, Russell has crossed narrative levels and it is he rather than Schiff who is now in the Maghreb, sitting across Thassa, contemplating the sunset with her:

> And I'm here again, across from the daughter of happiness, as I never will be again, in anything but story. The two of us sit sampling the afternoon's slow changes, this sun under which there can be nothing new. She's still alive, my invented friend, just as I conceived her, still uncrushed by the collective need for happier endings. All writing is rewriting. (295)

As the previous quotation proves, it is only in his imagination—and in his writing—that Russell can bring a dead Thassa back to life. Once he has prompted his student's unfortunate end, the only thing he can do is to try to rewrite the story to pay homage to her and redeem himself from his guilt.[27] At this point, readers may be led to close the circle and realize that the novel they have been reading could represent Russell's attempt at getting rid of his shame after Thassa's death. This would also help to explain, in turn, why he initially decided to conceal his identity and hide himself behind an alleged heterodiegetic narrator. Suspicions are confirmed in the concluding paragraph, when Russell expresses his willingness to let his story develop freely: "And I am, for once, ready to try on anything the story might permit. What else can I do for her, except defy my type?" (Powers *Generosity* 295). This quotation ultimately evidences Russell's willingness to resist any totalitarian narrativizing impulse and write instead a story that, unlike the unwavering transhumanist narrative, is self-reflexive and non-totalizing.

As has been explained above, metafictional novels that present readers with a choice of endings do not tend to give them hints of which ending is the 'real' one within the diegesis. The narrator of *Generosity* does, nevertheless, seem to affirm the credibility of the first ending and deny that of the second one, which only happens in his imagination.

---

[27] The cathartic effects for victims of trauma of putting their affect into words is an issue that will be addressed in length in the chapter on Don DeLillo's *Zero K.*

This narrative choice is not without implications, as it is precisely the means by which Powers puts forward his own view of happiness—which contrasts greatly with the transhumanist view of happiness as a product of the right genetic coding. By depicting a character who, in spite of being genetically predisposed to experiencing happiness, eventually takes her own life because of the pressure to which she has been exposed, Powers conveys the idea that happiness is not only the result of having the right genetic coding—and, therefore, something that can be genetically engineered.

The character of Thassa adds more clues that support this reading of the writer's musings on human happiness. As has been mentioned in earlier sections, in spite of having gone through several traumatic situations in her childhood, Thassa is able to show a cheerful disposition. This is largely because the writer draws her as a highly resilient person. The American Psychological Association (APA) define resilience as the "process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress—such as family and relationship problems, serious health problems, or workplace and financial stressors." Then, they provide advice on how human beings may best adapt to life-changing situations. Thus, building connections with other people, fostering our physical and spiritual wellness, finding purpose (both by helping others and knowing how to deal with our problems and achieve our goals) and embracing healthy thoughts, are all strategies that, according to the APA, may empower human beings "to withstand and learn from difficult and traumatic experiences" ("Building Your Resilience").[28]

When reading Powers's novel, Thassa's resilient attitude becomes apparent: the author depicts her as somebody who cares for the others, always thinks positive, and finds pleasure in the smallest things in life. With the people she knows—especially Russell, Candace, and her Journal and Journey classmates—she builds strong relationships and shows kindness and understanding. For those she does not know, she always has a kind word. Thus, at some point she is captivated by a hat worn by a woman she encounters in the street. As the woman walks towards her, Thassa greets her and spins around, turning "like a planet in an orrery." Then, she tells the woman that she likes her hat. "The stranger's delight," the narrator recounts, "is visible from six floors up" (Powers *Generosity* 52). Furthermore, the portrayal of Thassa as somebody who always thinks

---

[28] See María Ferrández San Miguel's article "Towards a Theoretical Approach to the Literature of Resilience: E. L. Doctorow's *Ragtime* as a Case Study" (2018) for a detailed analysis of recent discussions on resilience as an alternative response to trauma and its representation in contemporary literature.

positive becomes most evident when, after the second Journal and Journey class, Russell asks his students to write an essay on the topic "Convince someone that they wouldn't want to grow up in your hometown" (27). In her essay, which she emails to Russell and which is summarized by the narrator in part one of the novel, Thassa sets out to recount her life story, providing readers, first of all, with an overview of the motives behind the Algerian civil war. She then recounts how his father died during the war, and how she then moved to Paris, where her uncle was living, with her mother and brother. Only four months later, her mother was diagnosed with a pancreatic tumor, of which she died seventeen weeks later, as Thassa was reading to her aloud the latest news from Algiers. In spite of everything, Thassa concludes her essay on a positive note, praising the beauty of her home country: "*But still*, she writes, *it is so beautiful there. I wish you could see it, up close, from the harbor. It would fill your heart. So crazy with life, chez nous*" (30; emphasis in the original).

Thassa is also able to enjoy the small things in life. This clearly shows when, after their first meeting at the "dialogue between the Two Cultures" (Powers *Generosity* 137), Thassa and Kurton meet at the Shedd Aquarium in Chicago. The genomicist aims to convince her to undergo the genetic tests in Boston. As they are waiting to buy the tickets, the Algerian confesses going there almost once a week and never getting tired of it, which makes Kurton get goose bumps in his neck. As the narrator states, focalizing through Kurton: "The simplest pleasure—watching fish glide by on the other side of murky-green glass—never goes stale and needs no escalation. She's jumped off the hedonic treadmill and *doesn't habituate*" (144; emphasis in the original). Overall, happiness is portrayed in the narrative not as the product of the right genetic coding but as a state of mind human beings need to achieve. As Thassa is able to show a cheerful disposition in spite of having gone through several traumatic situations in her childhood, Powers's metafictional strategies point to the human need to be resilient in the face of difficulties. The remedies are not biotechnological issues but to build strong relationships with other human beings, to think positive, and to learn to appreciate the small things that make life worth living.

2.4. CONCLUSION

The possibility of putting technology to the service of enhancing our limited human capabilities and, more specifically, of increasing human happiness levels through biotechnology is, as this chapter has argued, a widely discussed issue in transhumanist

circles. In view of both the fast pace at which the biotechnology industry develops and the increasing transhumanist efforts at convincing the population of the need to direct research towards that goal, the need to reflect on where we want our technologies to take us is now more evident than ever. With his 2009 novel *Generosity*, Powers has proved again that fiction can be a suitable means of exploring some of the ethical and philosophical dilemmas that surround the biotechnological enhancement of the human condition—and, in particular, the idea of turning to biotechnology to achieve long-lasting gratification. Regrettably, transhumanist critics often overlook these aspects. Powers's choice to write a metafictional novel to deal with the possibilities and challenges of increasing human happiness levels through biotechnology may at first seem striking, given the apparent obsolete nature of this literary strategy. Nevertheless, when analyzing the novel from the double perspective of transhumanism and critical posthumanism, the writer's narrative choices prove to be most pertinent. Metafiction has often been criticized for just experimenting with form for the sake of it, without pursuing a clear agenda. Powers's use of metafiction in *Generosity* proves otherwise as it does serve valuable purposes in its undermining of totalizing narratives.

As this chapter has set out to demonstrate, the narrative consists of two parallel narrative strands that interweave and eventually converge in part three of the novel. In one of these narrative strands, an omniscient narrator introduces readers to Thomas Kurton's transhumanist ideas. In the other narrative strand, which follows the lives and deeds of Russell Stone and his student Thassadit Amzwar, we find an alleged heterodiegetic narration with explicit intrusions from the extradiegetic narrator—who eventually proves to be Russell himself. By establishing a contrast between the two narrative modes, Powers awakens readers to the constructed character of Kurton's transhumanist narrative on the technological enhancement of the human condition and, by extension, to the constructedness of the transhumanist narrative put forward by contemporary transhumanist critics and thinkers.

More specifically, the writer introduces in the sections that deal with Russell and Thassa the self-conscious divagations of a narrator who exposes the artifice of his storyworld and even questions his own reliability and that of his narrative. This ultimately gives rise to a self-reflexive and non-totalizing narrative that draws the reader's attention to Kurton's unwavering transhumanist discourse in the other narrative strand. Furthermore, the narrator sometimes addresses readers directly and points to their ability

to predict Thassa's unfortunate finale after having fallen in Kurton's grips. If we can anticipate the Algerian's fate it is because of the discourse of inevitability put forward by Kurton in the other narrative strand, which mirrors, in turn, the discourse of inevitability put forward by transhumanist critics in contemporary society. By addressing readers directly, the narrator takes them to realize that just like Thassa's future has been written by the transhumanists, human beings could eventually be dragged to a future of unrestrained technological progress if we believe the words of those who present the coming transhuman age as inevitable. Ultimately, this discourse of inevitable technological progress is presented as nothing but a construction, which can ultimately be challenged and even changed.

Lastly, the narrator provides readers with two alternative endings to the story of Thassa, and affirms the credibility of only one of them, the one that ends with Thassa committing suicide in the motel room. With this narrative choice, the narrator further dismantles the transhumanist discourse on the genetic basis of happiness and puts forward instead an alternative view of happiness as a state of mind human beings need to achieve. More specifically, the narrator portrays a character who in spite of seemingly being genetically predisposed to experiencing happiness takes her own life due to the pressure to which she is subjected. In this way, the novel conveys the idea that happiness is not only the result of having the right genetic coding—and, therefore, something that can be genetically engineered—but also the result of showing the right disposition and attitude towards life. Thassa, with her resilience in the face of adversity and her ability to appreciate the here and now, ultimately shows the way to happiness.

3. When Utopia Meets Dystopia: Social Media Tools and Surveillance Devices in Dave Eggers's *The Circle* (2013)

3.1. INTRODUCTION

3.1.1. Dave Eggers: from *A Heartbreaking Work of Staggering Genius* (2000) to *The Circle* (2013)

Another contemporary North-American author who has shown an interest in the different ways human enhancement technologies may affect human life and culture is Dave Eggers. The Boston-born writer, editor, and publisher gained recognition as one of the most prominent writers in the US with the publication of his first work *A Heartbreaking Work of Staggering Genius* (2000). The book, described by Sara Mosle as "profoundly moving, occasionally angry and often hilarious," is a memoir—interspersed, nevertheless, with some fictional elements—which recounts the writer's efforts to raise his little brother Christopher in California after the tragic deaths of both their father and mother. Since then, Eggers has written a thematically and stylistically diverse variety of novels, short story collections, and screenplays, drawing the attention of both critics and the general public alike. Although Eggers's personality has often generated conflicting emotions on the part of the audience (Hamilton 5-6),[1] his creative talent is becoming more and more widely recognized. Thus, writing for *The New York Times*, reviewer Michiko Kakutani has described him as "an engaging, tactile writer." For his part, in an endorsement on the back cover of Timothy W. Galow's *Understanding Dave Eggers*—the only full-length study of Eggers's *oeuvre* published so far—North-American writer and literary critic Jonathan D'Amore categorizes the writer as "one of the most complex literary figures of the twenty-first century." Additionally, a growing number of academics and reviewers have explored the thematic and stylistic innovations present in Eggers's works, calling

[1] According to Caroline Hamilton, Eggers is often conceived as "a modern-day Citizen Kane: a hubristic figure abandoned by his parents and in search of a project to satisfy his yearning for success and approval" (6). According to Hamilton, because it shows a confidence that often "speaks of unedifying self-interest," Eggers's pretension arouses strong reactions on the part of the audience (6).

our attention to their visionary character and very often praising the writer's originality and inventiveness.[2]

Apart from his creative talent, Eggers stands out for his multifaceted career and his ability to "remain productive in an impressive array of endeavors" (Galow 9). The writer is, among other things, a founding member of the independent publishing firm McSweeney's, and has edited several journals devoted to literature and film. He is also the co-founder of 826 Valencia and Voice of Witness, two non-profit organizations devoted to helping children improve their writing skills and to publishing the writings of people who have suffered human rights violations, respectively. In this last respect, Galow points out that, throughout his career, Eggers has proved to be increasingly concerned with issues of social justice and committed to humanitarian projects (7). This personal interest, in turn, has translated into his fiction. Thus, *What Is the What: The Autobiography of Valentino Achak Deng* (2006) is a novel based on the personal tragedy of Valentino Achak Deng, a Sudanese boy whose life would be marked forever by the horrors of the Second Sudanese Civil War. The novel recounts how, after losing all his relatives and close friends during a violent attack on his village, Achak sees himself forced to flee the country. He then takes shelter on different refugee camps in East Africa, where he lives in very precarious conditions until, some years later, he finally immigrates to the US under the Lost Boys of Sudan program. Sadly, the conditions he encounters upon arrival to the 'promised land' are not much better.

Zeitoun (2009), a nonfiction work for which Eggers was awarded the Dayton Literary Peace Prize and the Courage in Media award by the Council on American-Islamic Relations, also reflects the writer's humanitarian commitment. As happened with *What Is the What*, it is based on a real story. In this case, that of Abdulrahman Zeitoun, a Syrian-American who, in the aftermath of Hurricane Katrina, sailed around his neighborhood in New Orleans in a secondhand canoe, distributing supplies and saving the lives of neighbors and pets alike. The work also recounts how one day, without prior notice and for no apparent reason, Abdulrahman is arrested, together with three other people, by some U.S. Army National Guard soldiers and some local police officers, and

[2] See, for instance, Kevin Brooks' "Dave Eggers's *What Is the What* as World Literature," Wolfgang Funk's "The Quest for Authenticity: Dave Eggers's *A Heartbreaking Work of Staggering Genious* between Fiction and Reality," or Michelle Peek's "Humanitarian Narrative and Posthumanist Critique: Dave Eggers's *What Is the What*."

is accused of terrorism and sent to a correctional center. Eggers's humanitarian and sociopolitical commitment can also be traced in *A Hologram for the King* (2012), a novel that represents, in turn, the writer's first attempt to grant a technological innovation an unusually prominent role in the narrative. The story revolves around Alan Clay, a frustrated American salesman who arrives in Jeddah, Saudi Arabia, with the hope of selling a holographic teleconferencing system to King Abdullah himself. Nevertheless, rather than delving deeper into the implications of this cutting-edge technology, Eggers uses it just as a vehicle for dealing with broader sociopolitical issues, such as the East-West culture clash, the "decline of American manufacturing," or "the collapse of the global economy" (Ciuraru).

The Circle was published in 2013, one year after the publication of *A Hologram for the King* and at a time when unrestrained technological development had already come to be regarded as an issue of pressing concern. In contrast to what happens in *A Hologram for the King*, technology in *The Circle* does play a crucial role. In fact, Eggers's main aims seem to be to ponder the ways in which the technologies developed by the company that gives the novel its name—and the policies that derive from them—affect the lives and subjectivities of the different characters of the novel and, ultimately, to stress the dangers of unquestioned technological development. The novel, which is set in the near future, tells the story of Mae Holland, a woman in her mid-twenties whose life is turned inside out when her college roommate Annie Allerton gets her a position at the Circle, one of the largest technology and social-media companies in the world. The company, which had "subsumed Facebook, Twitter, [and] Google" (Eggers *The Circle* 23), had become well known for launching "TruYou," a "Unified Operating System" which combined "everything online that had heretofore been separate and sloppy—users' social media profiles, their payment systems, their various passwords, their email accounts, user names, preferences" (21).

Soon, readers learn that Mae had grown up in Longfield, California, a town she had left to attend a four-year degree at Carleton College, Minnesota. There, Mae had rambled "from art history to marketing to psychology" (Eggers *The Circle* 3) and had finally graduated in psychology. Upon graduation, the protagonist had found herself highly indebted and had had no choice but to return to Longfield and get a job at the local gas and electric utility, a job she acutely disliked. By contrast, her friend Annie had graduated from Carleton and gotten a master's degree in business administration from

Stanford, landing at the Circle just "days after graduation" (3). She had soon worked her way up the company and was now part of the so-called "gang of 40" (14)—the forty most exceptional minds at the Circle. Annie had urged Mae to apply for a job at the Circle and, although she swore she had pulled no strings, Mae was certain that she *had* used her influence to get her a job at the company. Mae felt, thus, "indebted beyond all measure" (3).

Thus, the very first sentence of the novel reads: "MY GOD, MAE thought. It's heaven" (Eggers *The Circle* 1), a sentence which conveys the protagonist's surprise and delight upon her arrival at the Circle's main campus, located near the fictional city of San Vincenzo, California. The campus is described in the novel as "vast and rambling" and as a place where "the smallest detail had been carefully considered" (1). With all kinds of facilities available, from tennis and volleyball courts to a picnic area and a daycare center, the Circle's campus seemed to have been designed to meet all the needs of its more than ten thousand employees. Amid all this stood a four-hundred acre workplace made entirely of brushed steel and glass, where "the best people" were designing "the best systems" and obtaining "unlimited funds" (31) and which contrasted greatly with Mae's previous workplace at Longfield's public utility—described in the novel as "a tragic block of cement with narrow vertical slits for windows" (9).

The novel then recounts how Mae is placed in the Customer Experience department of the Circle and how she soon becomes adjusted to her new job, which involves "doing straight-up customer maintenance for the smaller advertisers" (Eggers *The Circle* 49). Her main task is to answer any queries clients may have and send them, afterwards, a survey to check whether they are satisfied with her answer. Although her job may seem to be undemanding at first, things get increasingly more complicated when some additional screens are installed next to her main computer screen. One of these screens is for "intra-office messaging" (52), and features messages from her co-workers. Another screen features Mae's social profile, establishing a separation between her "OuterCircle" and "InnerCircle" feeds (98). A smaller screen shows the questions asked by recent recruits at the Customer Experience department. Every day Mae has to answer hundreds of clients' queries while being, at the same time, attentive to her other screens, which also feature thousands of messages. Thus, it comes as no surprise that she feels a little bit overwhelmed at first. However, because she does not want to let her friend Annie

down, she sets out to answer as many queries and messages as possible, and very soon gets used to this frantic exchange of information.

During Mae's first weeks at the Circle, she has the chance to talk to people working in different departments and to get to know firsthand some of the revolutionary technologies that are being developed in the Circle, as well as some of the projects the company is working on. She learns, for instance, that the Circle is developing "a new kind of low-cost housing, to be easily adopted throughout the developing world" (Eggers *The Circle* 18). Furthermore, she learns that Francis Garaventa, a man she meets at a party on campus whose sisters were kidnapped and murdered when they were kids, is working on a program to prevent child abductions. By implanting a chip in the kids' anklebones, Francis expects to reduce child abduction, rape, and murder by 99 percent. The protagonist also finds out that the Circle aims to reduce crime rates by means of installing small-sized and wireless surveillance cameras all around the globe. Although at times Mae shows doubts regarding the implementation of some of these cutting-edge technologies and policies, readers witness how she increasingly manages to identify with the Circle's progressive ideology and eventually becomes an advocate for its revolutionary policies and surveillance technologies.

In fact, throughout the story, the protagonist comes to share the Circle's ideology so deeply that she does not seem to realize that the company's policies are becoming increasingly totalitarian while also compromising both her freedom and the freedom of the population. Thus, at some point in the story Mae starts wearing a camera around her neck with the aim of providing her online watchers with "an open window into life at the Circle, the sublime and the banal" (Eggers *The Circle* 312). Not even when she feels obliged to adjust her behavior while she is on camera or otherwise forced to meet her friend Annie in the bathroom—which is the only place where she is allowed three minutes of privacy—does she stop to assess the suitability of the Circle's policies. On the contrary, she seems to be more and more enthusiastic about the Circle's technological innovations, to the point that she even contributes to taking things a step further and applying the Circle's technologies to completely new purposes. Thus, at some point she even suggests making it compulsorily for citizens to use their Circle profile to vote in the general elections, overlooking the human rights implications of this policy.

As Mae works her way up the company, her relationship with her parents and close friends deteriorates. Some of these characters warn Mae of how her behavior has

changed since she started working for the Circle and try to make her realize the totalitarian nature of some of the company's policies. However, Mae ignores their warnings and instead tries to explain to them the reasons why they are "on the wrong side of history" (Eggers *The Circle* 374). These characters eventually give up on the protagonist and progressively distance themselves from her. Close to the ending of the novel, readers realize that, rather than being concerned with improving the situation, Mae shows no remorse for having lost their affection and support, and is now more concerned with winning the approval of the rest of the Circlers and of thousands of unknown online watchers.

The novel's ending conveys a sense of inevitability. The eventual death or disappearance of all the voices of dissent, together with Mae's unfailing determination to carry the Circle's policies one step further, suggest how easily a single private company might silence its detractors, impose its will on the population, and even determine the future of the nation—if not of humanity. The message that the novel conveys is particularly prescient in contemporary society. At a time when technology already permeates every aspect of human life and the pace of technological innovation keeps accelerating exponentially, human beings need to be more than ever aware of the interests behind the development of new technologies, to avoid being carried away by their appealing promises.

3.1.2. *The Circle*'s reception

Since its publication in 2013, *The Circle* has attracted the attention of a number of critics, who have approached the novel from different perspectives. There are four academic articles (Lyon, Pignagnoli, Ludwigs, Hobbs) that seem to be most prominent and representative of the different paths critics have followed when analyzing the novel. In his 2017 article "Surveillance Culture: Engagement, Exposure, and Ethics in Digital Modernity," the sociologist and director of the Surveillance Studies Centre David Lyon sets *The Circle* as an example of a novel that illustrates contemporary practices of sharing and the unrestrained transparency that seems to predominate in contemporary society. Lyon makes a distinction between the relatively new concept of "surveillance culture"—which he claims is directly linked to the growth of digital modernity in the twentieth and twenty-first centuries—and previous notions such as "surveillance state" or "surveillance

society," which paid less attention to "participation and engagement of surveilled and surveilling subjects" (828). According to Lyon, the concept of surveillance culture proves to be particularly pertinent to refer to present-day society, which is characterized by an unprecedented sharing of personal information, whether consciously or not, in the online public domain. As he puts it, surveillance nowadays "is no longer merely something external that impinges on our lives. It is something that everyday citizens comply with—willingly and wittingly, or not—negotiate, resist, engage with, and, in novel ways, even initiate and desire" (825-26). Then Lyon points at sharing as a key feature of surveillance culture, and claims that social media becomes "in some ways synonymous with such sharing" (830), an idea which is clearly present in Eggers's *The Circle*, a novel which also "prods and pokes at the transparency that has become a byword of the digital modernity's surveillance capitalism" (834).

Another critic who has engaged with surveillance in relation to *The Circle* is Virginia Pignagnoli. In her contribution to the work *Spaces of Surveillance: States and Selves* (2017), Pignagnoli analyzes Dave Eggers's *The Circle*, Jonathan Franzen's *Purity*, and Gary Shteyngart's *Super Sad True Love Story* as three post-postmodern novels that warn readers against the dangers that threaten citizens of societies overly dependent on digital technologies. Referring to *The Circle*, this critic argues that by means of branding its various digital innovations as "essential for our well-being and for the progress of the human race" the leading technology company turns the country into a "totalitarian surveillance state" where there is no personal freedom (152). Pignagnoli uses the term "puppet-like" to refer to the protagonist and the other employees of the Circle, whose actions are solely "guided by a utopian desire to make the world a better place through digital technology" (156), and who show a clear lack of critical understanding, as becomes evident when reading the novel. According to Pignagnoli, the shallowness of these characters is not without implications. On the contrary, it has the effect of eliciting a mimetic response on the part of the readers, who "question these characters as versions of ourselves: are they/we human, post-human, cyborgs?" (157), which reinforces, in turn, the novel's ethical purpose (158). Pignagnoli closes her article by arguing that Eggers's warning is also reinforced by his "'unvoiced' presence on the Internet" (162). Thus, the writer refuses to interact with his readers through social media.

Rather than focusing on how accurately the hazards of our modern technological society are depicted in *The Circle,* or on how prescient the novel is in delineating our

immediate future, Marina Ludwigs sets out to provide an "anthropological explanation of the type of paranoia to which the novel gives voice." Thus, in her article "The Posthuman Turn in Dave Eggers' *The Circle*" (2015) she argues that the kind of control exerted by the Circle reflects and validates Gilles Deleuze's warning that we are moving from an analogical disciplinary society—as described by Michel Foucault in his work *Discipline and Punish*—towards a society of digital control. Ludwigs argues that, as happens in contemporary society, innovation in the novel is possible thanks to "an understandable human desire for instant gratification that aims to make the navigation of the world more seamless, fluid, and immediate, to bring it closer to one's fingertips." According to this critic, human beings are so blinded by the possibilities that the latest technological innovations offer that they often fail to realize that a mechanism of control is hidden behind these positive applications.

In her article "'You Willingly Tie Yourself to These Leashes': Neoliberalism, Neoliberal Rationality, and the Corporate Workplace in Dave Eggers' *The Circle"* (2017), Philippa Hobbs adopts a slightly different perspective, setting *The Circle* as an example of a novel that bears witness to the market fundamentalism that characterizes contemporary society. Throughout her article, Hobbs relies largely on political scientist Wendy Brown's ideas, who regards neoliberalism not just as an ideology, a set of policies, or a relation between state and economy but as a normative order of reason that affects every human domain. According to Hobbs, many writers have set out to uncover the ways in which neoliberal rationality has come to permeate "all spheres of existence" (2) and take "deeper root in subjects and in language, in ordinary practices and in consciousness" (Brown 48, qtd. in Hobbs 2). In *The Circle*, Eggers has given us a word of warning against "corporate technoculture's stealth threat to freedom" (Hobbs 8). By portraying an uncritical, neoliberal protagonist who, rather than questioning the Circle's ethics, shows an increasingly committed attitude to the company's values, Eggers denounces neoliberalism's "dehumanising pressure on individuals" to assume the role of market actors (2).

Eggers's novel has been analyzed, thus, from a variety of perspectives. From the perspective of surveillance studies, *The Circle* has been read as a (post-postmodern) novel that exemplifies contemporary practices of surveillance (Lyon, Pignagnoli). From an anthropological perspective, it has been read as a novel that epitomizes the transition from an analogical disciplinary society to a digital society of control (Ludwigs), and from the

perspective of neoliberalism, as a novel that proves how *laissez-faire* rationality has come to permeate all aspects of contemporary society (Hobbs). Apart from awakening the interest of academics, the novel has also fascinated some writers, reviewers, and the general public as a whole. In an extensive review for *The New York Review of Books*, Margaret Atwood describes *The Circle* as a "fascinating" work of fiction and, ultimately, as "a novel of ideas." According to the Canadian writer, Eggers's novel does not stand out for portraying well-developed characters with "many-layered inwardness." As she points out, "it isn't 'literary fiction' of that kind." For her, the relevance of the novel lies instead in its ability to make us question our beliefs and assumptions regarding social media, transparency, privacy, and surveillance. As she states, "it's an entertainment, but a challenging one: it demands that the reader think its positions through in the same way that the characters must." Thus, Atwood suggests that Eggers's purposes seem to be to study the ways in which we look and are looked at, on the one hand, and to remind us how easily we may be "led down the primrose path . . . by our good intentions," on the other. In this last respect, Atwood warns that, in the society depicted in the novel, "there's no sadistic slave-whipping tyranny." On the contrary, it is its own citizens who spend quite a lot of energy on making the world a better place and disregard the more nefarious aspects of having full accessibility to information. This is the reason why, as opposed to other reviewers who have labelled the novel as dystopian (Smith), Atwood prefers to refer to *The Circle* as "a satirical utopia for our times."

In a similar vein, other reviewers, such as Michiko Kakutani, Kyle Smith, or Edward Docx, agree that Eggers's novel becomes particularly relevant in present times, "an age of surveillance and Big Data" (Kakutani) in which citizens willingly place their privacy and individuality in the hands of Silicon Valley's "techno-titans" (Docx). While the novel's relevance and prescience remain largely undisputed, Eggers's narrative choices have given rise to negative criticism. Thus, some reviewers have pointed to some basic flaws in the plot of the novel. For both Kakutani and Linklater, Eggers seems not to make up his mind on whether he is writing a satire of the current state of affairs or a dystopia warning against the perils of a near future. As Kakutani puts it, "because the narrative vacillates between these two modes, it never really gives the reader the sense of being thoroughly immersed in a coherent, fully imagined universe with rules and an inevitability of its own." Other reviewers have criticized the writer's tendency to over-explain obvious facts and his too-evident way of conveying his message (Ullman;

McMillan). For his part, Graeme McMillan has pointed to Eggers's lack of research on the technological innovations the novel calls into question.

3.1.3. *The Circle*'s struggling status between transhumanist utopia and technological dystopia

Surprisingly enough, although the novel has been approached from several different perspectives, few critics have made critical posthumanism the point of departure for their analyses, nor has the novel been extensively analyzed from the perspective of transhumanism. However, because the novel fictionalizes transhumanist arguments on the pertinence of putting technology to the service of enhancing the human condition and improving society while also voicing some critical posthumanist concerns, an analysis from the double perspective of transhumanism and critical posthumanism seems both appropriate and necessary.

At first glance, the novel may appear to epitomize the unrestrained techno-utopianism of transhumanist philosophy. Apart from trying to control all the searches and message exchanges in the country, the technology company depicted in the novel aims at developing cutting edge technologies to increase human capacities and improve society and shows, from beginning to end, a clearly transhumanist ethos. Nothing different could be expected from a place where "everything was done better," to the point that "even the *fingerprint ink* was, advanced, invisible" (Eggers *The Circle* 42; emphasis in the original). Or where ten thousand carefully selected workers from "a dizzying range of national origins" (60) attempted "constantly and passionately, to improve themselves, each other, share their knowledge, disseminate it to the world" (106). From "retinal interface" (4) to "iris scanning and facial recognition" (57) and sensors that "collect data on your heart rate, blood pressure, cholesterol, heat flux, caloric intake, sleep duration, sleep quality, digestive efficiency, on and on" (155), every Circle innovation has been designed to make life easier for human beings by pushing beyond their human limitations. Furthermore, readers learn that associated to some of the Circle's innovative technologies are a series of innovative policies and programs ultimately aimed at improving society. The spectrum ranges here from the above-mentioned low-cost housing and the program to prevent child abductions, to "CircleMoney" (173), which aims to reduce crime by obviating the need for paper currency while promoting instead safe online transactions. Or to the

"WeaponSensor program" (450), which activates an alarm whenever someone carrying a gun enters a building, alerting both neighbors and the local police.

The language used by the people working at the company, which mirrors the language used by some advocates of transhumanism in contemporary society, is also revelatory of the Circle's transhumanist ethos and ultimately suggests that an analysis of the novel from the perspective of the transhumanist philosophy may be in order. Thus, Eamon Bailey—one of the Circle's chief executives—while discussing with Mae the one of the positive applications of SeeChange cameras, claims to be "a believer in the perfectibility of human beings" (Eggers *The Circle* 293). As he puts it:

> I think we can be better. I think we can be perfect or near to it. And when we become our best selves, the possibilities are endless. We can solve any problem. We can cure any disease, end hunger, everything, because we won't be dragged down by all our weaknesses, our petty secrets, our hoarding of information and knowledge. We will finally realize our potential. (293-94)

This quotation seems to echo one of the main arguments of the transhumanist philosophy: the idea that human beings have not reached their final stage of development and that they should take advantage of any technology available to overcome their human limitations and become posthuman (Bostrom "Transhumanist Values" 4).

As explained in previous chapters, in her work "Wrestling with Transhumanism" N. Katherine Hayles argues that the optimistic transhumanist philosophy has often failed to account for the changes in human life and culture brought about by advanced technologies (225). This issue points to the fact that an analysis of the novel exclusively from the perspective of transhumanism may fall short, and that other critical frameworks may allow for a more encompassing reading. In fact, the more dystopian side of the Circle's transhumanist technologies becomes most evident when approaching the novel from the perspective of critical posthumanism, a critical framework that, as opposed to the optimistic transhumanist philosophy, is more concerned with how technology may affect human life and culture. An analysis of *The Circle* from this approach proves that, although the novel does engage with the positive applications of the Circle's technologies—especially its social media tools and surveillance devices—it ultimately sides with other less optimistic critical posthumanists and warns readers against their potentially dehumanizing effects. More specifically, Eggers's narrative strategies call the reader's attention to the fact that, by translating all human experiences into data, these

technologies can threaten human freedom and privacy and lead human beings to disregard more physical aspects of their lives in favor of virtuality.

In sum, focusing on the Circle's social media tools and surveillance devices—which are Eggers's main concern in the novel—and paying special attention to some of the formal devices used by the writer, this chapter aims to explore how the novel contributes to the debate over human enhancement technologies. More specifically, these pages aim to demonstrate that an analysis of the novel from the combined approach of the transhumanist philosophy and critical posthumanism allows for a more encompassing reading which acknowledges the possibilities opened up by the Circle's enhancement technologies without disregarding their more nefarious implications. Thus, the first section of the chapter focuses on the enhancement opportunities opened up by the Circle's social media tools and surveillance devices, drawing similarities and differences between these technologies and the ones already available in contemporary society and recapitulating the most common arguments for and against the use of these technologies put forward by contemporary critics and sociologists. The second section of the chapter focuses on the narrative strategies used by Eggers to fictionalize the two different sides of the debate on human enhancement technologies. On the one hand, by introducing a heterodiegetic narrator who focalizes on the techno-utopian protagonist, as well as by making use of free indirect discourse, readers are led initially to identify with the Circle's transhumanist approach and recognize the possibilities opened up by its cutting-edge technologies. On the other hand, as the story progresses, those same techniques together with the progressive introduction of the voices of other characters, irony, and some mottos and symbols, serve to denounce the disembodiment and dehumanization these technologies may bring about and to make readers realize how easily a transhumanist utopia may turn into a dystopia.

3.2. *THE CIRCLE* AND TRANSHUMANISM

3.2.1. *The Circle*'s social media tools and surveillance devices

Although throughout *The Circle* readers are presented with a wide spectrum of cutting-edge technologies and policies, the novel pays special attention to the enhancement possibilities offered by the Circle's social media tools and surveillance devices and the policies that derive from them. On the one hand, the social media tools described in the

novel seem to be a combination of well-known social networks such as Facebook, Instagram, and Twitter, even if slightly updated. As happens in contemporary society, the characters in the novel have at their disposal some online platforms where they can share their experiences, as well as their thoughts, tastes and preferences. They can also learn about other people's experiences and thoughts, give them "a smile or a frown" (Eggers *The Circle* 51), find people with similar interests and become involved in online communities. Besides, thanks to the company's instant messaging services, they are connected to each other at all times. In sum, the social media technologies provided by the Circle allow the characters in the novel to transcend any physical barriers that had previously confined them to a narrower social circle and to lead instead more active social lives—albeit virtually. In this sense, therefore, the Circle's social media tools can be said to contribute to transhumanist goals. Undoubtedly, this sounds all too familiar to us. North-American expert in information and communication technologies Howard Rheingold, who in 1993 had already published the path-breaking book *The Virtual Community*, suggested in his 2002 book *Smart Mobs: the Next Social Revolution* that "mobile communications and pervasive computing technologies" were "beginning to change the way people meet, mate, work, fight, buy, sell, govern, and create" (xiii). More recently, in the preface to the 2010 edition of *The Rise of the Network Society*, Spanish sociologist Manuel Castells claimed that Facebook and other websites that allow the formation of on-line communities have considerably expanded human forms of sociability (xxix).

However, the novel goes one step further and anticipates that even democracy could benefit from the opportunities offered by these social media tools if they happened to be put to new uses. More specifically, Mae Holland and Eamon Bailey consider the possibility of requiring citizens to vote in the general elections through their Circle profiles, a measure that would consequently make it compulsory for citizens to own a Circle account. Apart from considerably reducing the costs of carrying out an election, this measure would ensure full participation and, therefore, help to build a more democratic society—or, to use Bailey's words, a "one hundred percent democracy" (Eggers *The Circle* 390). The notion of creating a more participatory democracy by means of the use of social media tools stands clearly in line with the transhumanist aim of improving humankind and society by means of technology. More specifically, it reflects one of the main tenets of an existing trend within the transhumanist movement known as

democratic transhumanism, which places increasing political participation as a main issue in its agenda. As early as 2004, the then director of the World Transhumanist Association James Hughes already claimed that human enhancement technologies promised increase "our capacity for citizenship, making direct, participatory, electronically mediated democracy more possible" (199). More recently, in his electoral program for the 2020 presidential election, transhumanist politician Zoltan Istvan promised to modify the US Constitution so as to include a fourth branch of government built around the concept of "Direct Digital Democracy" ("Policies"). Thus, Istvan planned to allow citizens to "vote on policies in real-time using new technologies."

On the other hand, the novel shows how, by addressing the principles that "all that happens should be known" (Eggers *The Circle* 68) and that "knowledge is a basic human right" (303), small-sized and wireless surveillance cameras are set up all around the globe. These "SeeChange cameras" (67), which is the name they receive in the story, are, once again, an improved version of the actual closed-circuit television cameras (CCTV) that, at the turn of the millennium, had become a symbol of security in the modern urban landscape (Relph 133). Their presence has done nothing but increase since then, especially after the dramatic events of 9/11. Going one step further than CCTV, SeeChange cameras provide "high-def-quality resolution," transmit images "via satellite" (Eggers *The Circle* 62), run "on a lithium battery that lasts two years," and are "waterproof, sand-proof, wind-proof, animal-proof, insect-proof, everything-proof" (63). Most importantly, they are much more affordable than CCTV:

> Okay, so, many of you are thinking, Well, this is just like closed-circuit TV crossed with streaming technology, satellites, all that. Fine. But as you know, to do this with extant technology would have been prohibitively expensive for the average person. But what if all this was accessible and affordable to anyone? My friends, we're looking at retailing these—in just a few months, mind you—at fifty-nine dollars each. (63-64)

One of the main objectives behind the setting up of these cameras in the novel—which goes in line with the traditional purpose of surveillance cameras and, in turn, with Jeremy Bentham's main aim when designing his well-known panopticon—is to make crime rates drop. As Eamon Bailey points out, "who would commit a crime knowing they might be watched any time, anywhere?" (Eggers *The Circle* 67). Bailey suggests that this would certainly "lead to a more moral way of life" (292) because when human beings know they are being watched they behave better, they become a better version of

themselves. In fact, the novel provides good evidence of this. Thus, at some point in the story, Mae momentarily steals a kayak she finds on the bay. Very soon, everybody finds out about it thanks to a SeeChange camera that had been installed in the area. When being asked about this incident, Mae feels extremely embarrassed and confesses she would not have done it if she had known she was being recorded, thus validating Bailey's contention.

However, as well as reducing crime rates, SeeChange cameras are also put to some other revolutionary uses in the story. Firstly, they are a way to transcend physical barriers by allowing citizens to benefit from an unlimited access to information and removing, thus, "the unnecessary, and antiquated, burden of uncertainty" (Eggers *The Circle* 196). The novel shows that, with SeeChange cameras spread all over the world, any kind of information, as insignificant as it may be, is now within the citizens' reach:

> Instead of searching the web, only to find some edited video with terrible quality, now you go to SeeChange, you type in Myanmar. Or you type in your high school boyfriend's name. Chances are there's someone who's set up a camera nearby, right? Why shouldn't your curiosity about the world be rewarded? You want to see Fiji but can't get there? SeeChange. You want to check on your kid at school? SeeChange. This is ultimate transparency. No filter. See everything. Always. (69)

Secondly, SeeChange cameras are a way of ensuring transparency in important aspects of public life, such as politics. In an "Ideas talk" (Eggers *The Circle* 205) that he gives at the Circle, Tom Stenton, "the world-striding CEO and self-described *Capitalist Prime*" (23; emphasis in the original), denounces the fact that

> so long after the founding of this democracy, every day, our elected leaders still find themselves embroiled in some scandal or another, usually involving them doing something they shouldn't be doing. Something secretive, illegal, against the will and best interests of the republic. (207)

After that, Stenton and Representative Santos—the first congresswoman to broadcast every aspect of her everyday life online in the story, who comes as a guest to the talk—claim that SeeChange cameras could be a way of stopping these illegal practices. According to Representative Santos, wearing these cameras and, thus, going transparent should be mandatory for all the elected leaders because

> it is your right, is it not? It's your right to know how they spend their days. Who they're meeting with. Who they're talking to. What they're doing on the taxpayer's dime. . . . What part of representing the people should not be known by the very people I'm representing? (209-10)[3]

Hence, in *The Circle* Eggers presents his readers, first, with some of the present and possible future opportunities opened up by the Circle's social media tools and surveillance devices. At the beginning, his story suggests that, by extending our limited human capabilities in different ways, these technologies could open up a whole array of possibilities for human beings and improve our way of living. As has been mentioned above, the technologies presented in the novel contribute, on the one hand, to creating a safer and more democratic society. On the other hand, they foster human interaction and put people with similar interests and problems in contact—the novel mentions, for instance, the existence of "four [online] groups on campus for staffers dealing with MS [Multiple Sclerosis]" (Eggers *The Circle* 183). Additionally, they work towards creating a more egalitarian society by ensuring that everybody has access to the same experiences. In this last respect, at some point in the novel Bailey talks about his son being on a wheelchair and not being able to experience some particular things. What Bailey suggests is that if people uploaded everything they did onto these social media platforms, disabled people would have access, by means of videos or photos, to places they would otherwise never be able to visit. In light of all their potential benefits, adopting these technologies would seem, consequently, clearly desirable, as the creators of the company and the people who work there seem to suggest. Mae Holland, Tom Stenton, and Eamon Bailey are all characters that call the reader's attention towards the positive aspects of the Circle's transhumanist technologies, as will be explained later on in more detail.

3.2.2. Recapitulating the debate on social media tools and surveillance devices

In a similar vein, some contemporary critics have expressed their optimism about social media tools and surveillance devices and claimed that both human beings and society as a whole could greatly benefit from the use of these technologies. Thus, according to British anthropologist Robin Dunbar, social networking sites have, for instance, made it

[3] Remarkably, in his 2020 electoral program Istvan also promised to implement "real-time public surveillance of police officers" as well as to ensure "greater transparency overall of government" ("Policies").

possible for us maintain friendships that "would otherwise rapidly wither away" and "to reintegrate our networks so that, rather than having several disconnected subsets of friends, we can rebuild, albeit virtually, the kind of old rural communities where everyone knew everyone else." For his part, Rheingold has claimed that "connected and communicating in the right ways, populations of humans can exhibit a kind of 'collective intelligence'" (*Smart Mobs* 179). Other scholars have carried out studies that have proved the usefulness of CCTV surveillance devices in reducing crime rates in public places (see, e.g., Welsh and Farrington 59-80).

By contrast, some critics have warned of the necessity to see beyond the optimism that usually accompanies these technological developments, a path that Eggers also follows in his novel. In fact, both social media tools and surveillance devices have been frequently accused of bringing about dehumanizing effects. More specifically, social media tools have been blamed, among other things, for negatively affecting human relationships and threatening human freedom and privacy. Firstly, some critics have claimed that although in this hyper-technological world human beings are increasingly connected thanks to social networks and other online technologies, the ties they establish tend to be weaker and shorter lasting, while true human relationships are seriously harmed (Mahon 11; Turkle 11). In his book *Digital Vertigo: How Today's Online Social Revolution Is Dividing, Diminishing, and Disorienting Us*, Andrew Keen also reflects on this issue. As this critic states:

> The inconvenient truth is that social media, for all its communitarian promises, is dividing rather than bringing us together, creating what Walter Kirn describes as a "fragmentarian society." In our digital age, we are, ironically, becoming more divided than united, more unequal than equal, more anxious than happy, lonelier rather than more socially connected. (66-7)

Secondly, other critics have argued that human beings in contemporary society are very often deprived of the freedom to decide whether they want to join the online social revolution or to remain on the sidelines. Keen, for instance, has claimed that, in this digital age in which "personal visibility . . . is the new symbol of status and power," human beings often see themselves forced to go with the flow and to share their lives online in order not to feel excluded (13). Finally, other critics, such as Peter Mahon, have pointed at the fact that personal privacy is being threatened, as human beings are increasingly living under constant surveillance due to the increasing powers of the Internet and social

media tools. In this respect, Mahon claims that the Internet and communication technologies are nowadays "constantly spying on their users, collecting data on them, their purchases, browsing habits, their movements" (15). In his latest work *Ten Arguments for Deleting Your Social Media Accounts*, Silicon Valley insider Jaron Lanier denounces that human beings are increasingly being tracked and measured through technological devices such as smartphones:

> Algorithms gorge on data about you, every second. What kinds of links do you click on? What videos do you watch all the way through? How quickly are you moving from one thing to the next? Where are you when you do these things? Who are you connecting with in person and online? (5)

Surveillance devices have also traditionally been blamed for threatening personal privacy. As Lyon puts it in the introduction to the 2013 work *Liquid Surveillance*, in which he converses with Zygmunt Bauman about the concept of liquid surveillance, "loss of privacy might be the first thing that springs to many minds when surveillance is in question" (17). However, Lyon then goes one step further and suggests that there are other issues related to privacy which are equally affected by surveillance in contemporary society. In particular, he is referring to issues of "fairness and justice, civil liberties and human rights." In the introduction to the *Surveillance as Social Sorting* (2003), Lyon further elaborates on this idea. Lyon first states that surveillance—which is nowadays frequently "carried out using networked computer systems"—has become "an unavoidable feature of everyday life in contemporary societies" (1). The same critic then suggests that because pervasive surveillance creates and strengthens long-term social differences, it should not be considered just a matter of personal privacy anymore but of social justice, ultimately proving that new surveillance practices pose new threats to human beings, which need to be identified and tackled alongside the traditional ones.

When reading *The Circle*, we realize that Eggers seems to share some of these arguments. The novel is not just the naïve celebration of transhumanist values it might seem to be at first. The negative effects that the Circle's enhancement technologies may entail on both an individual and a collective level take Eggers to look not only at their positive implications but also at their fundamental shortcomings. The following section approaches the novel from the more balanced perspective of critical posthumanism, laying the emphasis on the narrative strategies used by the writer to convey the possibilities opened up by the Circle's social media tools and surveillance devices, firstly,

and to denounce how these technologies may foster disembodiment and dehumanization, secondly.

3.3. *THE CIRCLE* FROM THE PERSPECTIVE OF CRITICAL POSTHUMANISM

3.3.1. When utopia meets dystopia

In his contribution to the collection *The Utopian Fantastic*, Dennis M. Weiss suggests—in line with what has been discussed in the previous sections of this chapter—that, over the last decade and a half, human beings "have witnessed a far-reaching, potentially important, but polarizing debate on the role of technology in reshaping and redefining our place in the cosmos." Some critics—such as Sven Birkerts, Neil Postman, and Mark Slouka—have held, according to Weiss, rather dystopic visions of this technological turn, denouncing "our growing reliance on technology," showing "concern over our increasing alienation from nature," and prophesizing "the loss of authentic subjectivity and true community" (69). By contrast, other critics—such as Rheingold and Barlow—have held more utopian positions, embracing technology as a way of building "more democratic, open, networked societies." According to Weiss, this debate has been recapitulated in contemporary SF, a genre that, he argues, is fully up to the task:

> Contemporary science fiction has been central to shaping our vision of the digital future and cyberspace and because it foregrounds technology it provides us with a readymade laboratory for examining and testing our intuitions about technology and the human lifeworld. (70)

As a matter of fact, over the last few decades and, as a direct consequence of rapid technological development, an increasing number of novels have explored the possible benefits and ills that the new technologies present for human beings. Among these works we find utopian and dystopian novels dealing with different kinds of human enhancement technologies, such as Zoltan Istvan's *The Transhumanist Wager* or Dave Eggers's *The Circle*, as a case in point.

Although utopian and dystopian visions—and, we could say here, utopian and dystopian fiction—are often conceived as antithetical, some theorists have argued for the need to treat them as complementary. M. Keith Booker, for instance, claims that "one might, in fact, see dystopian and utopian visions not as fundamentally opposed but as very much part of the same project" because

> not only is one man's utopia another man's dystopia, but utopian visions of an ideal society often inherently suggest a criticism of the current order of things as nonideal, while dystopian warnings of the dangers of "bad" utopias still allow for the possibility of "good" utopias, especially since dystopian societies are generally more or less thinly veiled refigurations of a situation that already exists in reality. (15)

That utopia and dystopia are two sides of the same coin becomes evident when reading Dave Eggers's *The Circle*, a book which, as noted earlier, has been described by critics and reviewers as both a dystopian novel (Smith) and "a satirical utopia for our times" (Atwood). Eggers's book can be considered, in fact, a mixture of the two perspectives. When we analyze the novel from a critical posthumanist approach, we realize that it is not just a celebration of transhumanist values; Eggers's narrative choices also uncover the more dystopic consequences of the Circle's enhancement technologies.

3.3.2. *The Circle*'s utopian promises

The first pages of the novel show, mainly, a markedly utopian character, as in them Eggers makes readers aware of the Circle's privileged position as one of the leading companies in the country and the positive implications of the technologies developed by the company. This effect is achieved mainly by means of introducing a heterodiegetic narrator who focalizes on the protagonist, but also by making use of free indirect discourse, when the voice of the omniscient narrator merges with that of the protagonist, embodying her feelings and thoughts. In this narrative mode, as French literary theorist Gérard Genette puts it, "the narrator takes on the speech of the character, or, if one prefers, the character speaks through the voice of the narrator, and the two instances are then *merged*" (174; emphasis in the original). When discussing the literary effects achieved by the use of free indirect discourse, literary theorist Brian McHale points out that this narrative mode has come to be widely recognized "both as a mode of ironic distancing from characters and as a mode of empathetic identification with characters" (275). In this respect, Stefan Oltean claims that when the narrator identifies with a character's personal perspective and renders it through free indirect discourse, the effect achieved is empathy (708). However, the narrator may also want to convey his distance from the character's perspective. By means of using free indirect discourse in combination with irony, the narrator may present readers with a contrast of values and ultimately lead them to distance themselves from the character's standpoint (Oltean 706).

In *The Circle*, the narrator frequently focalizes on and through Mae Holland and at times fuses with her perspective and spatial-temporal position. Thus, from the beginning of the novel—as mentioned earlier, the very first sentence reads "MY GOD, Mae thought. It's heaven" (Eggers *The Circle* 1)—readers learn how excited the protagonist is to start working for the Circle, which is described from her point of view as "the only company that really mattered at all" (3), as a place where "everything was done better" (42) and, ultimately, as the ideal workplace:

> Mae knew that she never wanted to work—never wanted to be—anywhere else. Her hometown, and the rest of California, the rest of America, seemed like some chaotic mess in the developing world. Outside the walls of the Circle, all was noise and struggle, failure and filth. But *here*, all had been perfected. The best people had made the best systems and the best systems had reaped funds, unlimited funds, that made possible *this*, the best place to work. (31; my emphasis)

The last two sentences of the previous quotation are a clear example of the use of free indirect discourse, as evidenced by the use of the words "here" and "this" instead of "there" and "that," which has the effect of bringing Mae's perspective closer to the reader by merging her time and place with the narrator's. Of crucial importance is the contrast established between Mae's new life within the Circle's walls and her previous job at the gas and electric utility in Longfield, California, a company whose technology officer paradoxically "happened to know nothing about technology" (10) and which was, according to Mae, "wasting life, wasting human potential and holding back the turning of the globe" (11).

In an interview with Stef Craps and Sean Bex, Eggers underscores the relevance of Mae's modest background. According to the writer, coming from a position of relative disadvantage, Mae is unlikely to grasp that there is something wrong with the Circle and its policies, which is of special relevance for the narrative:

> I thought it was really important that Mae come from a point of relative disadvantage. She comes from what we call the Central Valley, which is ninety miles from San Francisco—lower middle class, a lot of farming, pickup trucks, not a whole lot of money. She feels like she has been given this incredible gift to work at The Circle. As a result, she is inclined to discount any hints that something is awry. . . . She feels that no matter how bad it gets, it's never worse than where she came from, which makes it something of a perfect storm for turning or radicalizing someone. (551)

In fact, from beginning to end Mae shows an increasingly confident attitude towards the Circle and, although there are moments when she appears hesitant about some of its policies, she always ends up discarding these negative thoughts and aligning herself on the Circle's side.

Also from Mae's perspective, readers learn how she quickly gets used to her new job at Customer Experience and how her importance within the company increases, until she finds herself "communicating with clients all over the planet, commanding six screens, training a new group of newbies, and altogether feeling more needed, more valued, and more intellectually stimulated than she ever thought possible" (Eggers *The Circle* 243). From her point of view, readers also learn that her Circle's health insurance is going to cover the expenses of her father's multiple sclerosis treatment. Thanks to the use of free indirect discourse, readers tend to identify with the protagonist. Consequently, they share her joy and realize that the Circle might be indeed a reference company in the provision of cutting-edge services:

> Mae was alone in Annie's office, stunned. Was it possible that her father would soon have real coverage? That the cruel paradox of her parents' lives—that their constant battles with insurance companies actually diminished her father's health and prevented her mother from working, eliminating her ability to earn money to pay for his care—would end? (161)

Finally, and also from Mae's perspective, Eggers leads readers to think that the policies being developed at the Circle might be unique and might certainly help to improve society, as the following quotation shows: "Mae had the feeling, which she was used to by now at the Circle, that they alone were able to think about—or were simply alone in being able to enact—reforms that seemed beyond debate in their necessity and urgency" (154).

All in all, apparently reducing the distance between narrator and character by means of alternating the narrator's indirect discourse with free indirect discourse—which frequently produces the effect of making readers identify with the focalized character—Eggers manages to convey, at first, a positive image of the Circle and paves the way for what is coming next. Because readers are induced to share Mae's deep admiration for the Circle, they are more likely to accept without question all the innovations that are mentioned in the following pages. In fact, by delivering a series of very eloquent speeches, similar in format to the well-known TED talks, Eamon Bailey, Tom Stenton,

and Mae Holland herself almost manage to convince everybody around that the technologies being developed by the Circle—and especially its cutting-edge social media tools and its surveillance devices—could indeed build an interconnected, safer, more egalitarian and more democratic society, as hinted at in previous sections of the chapter.

However, readers may eventually become suspicious of the Circle's techno-utopian ideology, mainly for three reasons. Firstly, because also through focalization on Mae and free indirect discourse readers progressively become aware that, despite her increasing confidence in the Circle, the protagonist also appears at times hesitant about some of its innovations. Secondly, because free indirect discourse is also used in the novel to make readers adopt an ironic distance towards Mae and, consequently, towards the values she endorses. And, thirdly, because through the introduction of other narrative strategies such as the use of mottos, symbols and irony, the novel gradually induces doubts in the readers, inciting them to distance themselves from the Circle and its values.

3.3.3. *The Circle*'s more dystopian reality

3.3.3.1. Other uses of heterodiegetic narration with focalization on Mae and free indirect discourse

In addition to inviting readers to identify with the protagonist and her point of view, focalization and free indirect discourse are used in the novel to convey Mae's occasional doubts about the fast pace and high demands of Circle life, in general, and about some of the Circle's technologies and their applications, in particular. Thus, after a frantic first week at the Circle, Mae goes back to her parents' home for the weekend. Focalizing through the protagonist, the narrator describes how good it feels, after a week of incessant exchange of information at the Circle, just to lay down and watch a basketball game in her parents' living room:

> Mae was feeling dull-witted, her body reluctant to do anything but recline. She had been, she realized, on constant alert for a full week, and hadn't slept more than five hours on any given night. Simply sitting in her parents' dim living room, watching this basketball game, which meant nothing to her, all these ponytails and braids leaping, all that squeaking of sneakers, was restorative and sublime. (Eggers *The Circle* 136)

Kayaking is another activity that allows Mae to escape the Circle's frantic pace and wind off, especially during her first weeks working for the company but also further on in the story. When Mae is kayaking, the pace of the narration seems to slow down and, with her

as focalizer, readers are provided with detailed descriptions of what she sees, smells, hears, and feels. Sharing Mae's perspective, we realize that, as opposed to what happens when she is at the Circle, when she is kayaking she seems to be much more self-aware and appreciative of the natural world around her. "Occasionally she would smell that dog-and-tuna smell, and turn to find another curious seal, and they would watch each other, and she would wonder if the seal knew as she did, how good this was, how lucky they were to have all this to themselves" (84). Thus, although Mae shows an increasing commitment to the Circle and plays an increasingly significant role within the company as the story progresses, she still appreciates and feels the need to take these sea-kayaking trips. They allow her to escape the Circle's virtual turmoil and surveillance to enjoy instead the present moment, as evidenced by the following quotation: "Mae paddled toward the shore, her head feeling very light, the wine putting a crooked smile on her face. And only then did she realize how long she'd been free of thoughts of her parents, of Mercer, of the pressures at work" (145).

But as well as being a way of conveying Mae's need to get a break from her agitated life at the Circle, focalization and free indirect discourse are also used throughout the novel to convey the protagonist's reservations about some of the Circle's technological innovations and their groundbreaking applications. Thus, at some point in the story Mae attends the presentation of a new Circle app named "LuvLuv" (Eggers *The Circle* 120). Using "some high-powered and very surgical search machinery" (121), this dating app scans the web in order to provide its users with personal information about the persons they are going on a date with—from preferences for films, to favorite sports and places to jog, to favorite food and allergies. By making sure they know their date's tastes and preferences beforehand, LuvLuv aims to help its users, as the creator of the app Gus Khazeni states, to "send the right message—the message being that you're sensitive, intuitive, decisive, you have good taste and you're perfect" (120)—and, ultimately, to find true love. At some point during his presentation, Gus asks for volunteers to test the efficacy of the app. Mae's coworker Francis, who she has been recently seeing both inside and outside the Circle—raises his hand and heads up to the stage with the aim of finding out more things about Mae. Focalizing through Mae, the narrator calls the reader's attention to Mae's sense of unease at being the subject of Gus's experiment: "Mae thought she'd puke. What was happening? This isn't real, she said to herself. Was he [Francis] really going to talk about her onstage?" (122). Once the presentation is over and all of

Mae's preferences have been revealed to the audience—her allergy to horses, her favorite food, etc.—readers are, by means of free indirect discourse, induced to share the protagonist's sense of unease and her impression that there is something wrong with LuvLuv:

> So what had so mortified her during Gus's presentation? She couldn't put her finger on it. Was it only the surprise of it? Was it the pinpoint accuracy of the algorithms? Maybe. But then again, it wasn't entirely accurate, so was *that* the problem? Having a matrix of preferences presented as your essence, as the whole you? Maybe that was it. It was some kind of mirror, but it was incomplete, distorted. And if Francis wanted any or all of that information, why couldn't he just *ask* her? (126; emphasis in the original)

Therefore, by means of the use of free indirect discourse, readers are led to empathize with the protagonist and share her uneasiness at seeing her complexities reduced to a few traits. Furthermore, they are also incited to share her feeling that the app is unnecessary, since all that information could be obtained through normal conversation. In a similar vein, in his work *You Are Not a Gadget: A Manifesto*, Lanier denounces the "self-reduction" performed by individuals when creating a profile on a social networking site: "You fill in the data: profession, marital status, and residence." Lanier claims that, because they run on information—that in turn often "underrepresents reality"—social networks "are potentially reducing life itself," and ultimately undermines "the belief that computers can presently represent human thought or human relationships" (69).

Further on in the story Mae enters the company's clinic, only to find several Circlers talking in pairs, as if they were in a café, and five people working on tablets, one of them fully retinal. Focalizing through Mae, the novel shows how the protagonist, finding everybody immersed in the digital world and paying attention only to their own technological devices, does not know who to approach, and regrets not being greeted in a more traditional way: "Mae didn't know who to approach. There were five people in the room, four of them working on tablets, one fully retinal, standing in the corner. There was nothing like the standard window through which a medical administrative's face would have greeted her" (Eggers *The Circle* 151).

Another instance of the narrator conveying Mae's sense of unease toward a specific Circle innovation through focalization is when the protagonist's lover, Francis Garaventa, has sex images of the two uploaded to the Circle's cloud, a virtual storage room in which everything that is stored can never be deleted. Francis promises Mae he

will not advertise the video, and her friend Annie tries to calm her down by telling her that no one will ever see the video: “No one will ever see it. You know that. Ninety-nine percent of the stuff in the cloud is never seen by anyone. If it even gets one view, we can talk again. Okay?” (Eggers *The Circle* 206). Nevertheless, by focalizing on Mae, the narrator makes readers realize how concerned Mae is that something so private is available to the public: “She’d been unable to concentrate in the week since her encounter with Francis. The video hadn’t been viewed by anyone else, but if it was on his phone, it was in the Circle cloud, and accessible to anyone” (205). In his 2009 work *Delete: The Virtue of Forgetting in the Digital Age*, Viktor Mayer-Schönberger warns, precisely, of the dangers of “cheap digital storage, easy retrieval, and global access” (92). According to this critic, remembering becomes “cheaper and easier than forgetting” (196) in the digital age and, very often, individuals lose control over their own data: “With digital memory, a significant part of one’s remaining power over information dissipates and is redistributed to the millions with network access” (102).

Finally, and once Mae has become a well-known personality within the Circle, the people working for the company—the Circlers—are asked to answer the following question on their social media profiles: “*Is Mae Holland awesome or what?*” (Eggers *The Circle* 408; emphasis in the original). While 97 percent of them send Mae a smile, the other three percent frown at her. Mae feels defeated and, through free indirect discourse, readers realize that she seems to become aware, if only for a moment, of the overwhelming volume of information she has to deal with every day:

> And then it occurred to her, in a brief and blasphemous flash: she didn’t want to know how they felt. The flash opened up into something larger, an even more blasphemous notion that her brain contained too much. That the volume of information, of data, of judgments, of measurements, was too much, and there were too many people, and too many desires of too many people, and too many opinions of too many people. . . . But no. No, it was not, her better brain corrected. No. You’re hurt by these 368 people. This was the truth. (413-14)

Even though Mae finally overcomes her skepticism and manages to convince herself that she is just hurt by the 368 Circlers who have frowned at her, readers still have doubts as to whether human beings really need technology that allows them to know anything, anytime. Overall, the fact that Mae shows herself hesitant about some of the Circle’s innovations and their revolutionary applications, and that she even feels the need to get

away from the Circle every now and then, is of special relevance for the narrative. Through focalization and free indirect discourse, readers are expected to identify with her, to share her doubts, and to wonder whether all those Circle innovations are desirable or even necessary.

But apart from shortening the distance between readers and Mae—and consequently, inducing them to share both her confidence and doubts about the Circle—free indirect discourse is used in the novel with a different purpose. As mentioned earlier, this narrative mode also helps to create ironic distance, something that can be clearly perceived in *The Circle*. Throughout the novel, there are several instances of Mae's problematic thoughts conveyed by means of this narrative mode. Of special relevance are Mae's questionable thoughts towards her ex-boyfriend Mercer Medeiros, who still lives and works in Mae's hometown and with whom she still has a relatively good relationship. Mercer is a dissenter: he leads a life away from modern technologies and tries throughout the story, to no avail, to call Mae's attention towards the dehumanizing effects of the Circle's technologies and policies. Nevertheless, he is from beginning to end presented in a very positive light in the novel, and readers find it easy to empathize with him. Mercer's kindness and good nature can perhaps be best perceived in his relations with those around him. First, he is one of the few characters who shows his concern about Mae's change of heart once she starts working for the Circle, which shows that even though they are not in a relationship anymore, he still cares for her. Secondly, he is still in touch with Mae's parents, who hold him in great esteem, as can be traced in the following quotation: "'Oh, we saw Mercer the other day,' her mother said, and her father smiled. Mercer had been a boyfriend of Mae's, one of the four serious ones she'd had in high school and college. But as far as her parents were concerned, he was the only one who mattered, or the only one they acknowledged or remembered" (Eggers *The Circle* 75). Thirdly, he is portrayed as an exemplary son, not shy about showing his affection towards his family, even during his teens:

> On the mantel, Mae was sure she could see a photo she recognized, of Mercer with his brothers and parents, on a trip they'd taken to Yosemite. She remembered the photo, and was sure of the figures in it, because it had always struck her as strange and wonderful, the fact that Mercer, who was sixteen at the time, was leaning his head on his mother's shoulder, in an unguarded expression of filial love. (459-60)

In spite of everything, Mae looks down on him. By means of the use of free indirect discourse, the novel problematizes Mae's thoughts towards Mercer, inducing readers to adopt an ironic distanced position towards her. Thus, at some point Mae's mother asks her to come home because her father has had a seizure derived from his MS disease. When Mae gets home, she finds out that Mercer is also there, and that he was the one who drove Mae's parents to and from the hospital. Free indirect discourse is used here to make readers realize that, instead of being grateful to Mercer for helping her parents, Mae feels redundant and even a little bit jealous of him:

> She'd driven two hours in a red panic to find her father relaxing on the couch, watching baseball. She'd driven two hours to find her ex in her home, anointed the hero of the family. And what was she? She was somehow negligent. She was superfluous. It reminded her of so many of the things she didn't like about Mercer. (Eggers *The Circle* 128)

Furthermore, every time Mercer tries to warn Mae of how her behavior has changed since she started working for the Circle, she dismisses his warnings and responds by criticizing his physical appearance or looking down on his way of life. The protagonist's disrespectful attitude is conveyed, once again, by means of the use of free indirect discourse:

> But with every passing mile, as she drove home, she felt better. Better with every mile between her and that fat fuck. The fact that she'd ever slept with him made her physically sick. Had she been possessed by some weird demon? Her body must have been overtaken, for those three years, by some terrible force that blinded her to his wretchedness. He'd been fat even then, hadn't he? What kind of guy is fat in high school? He's talking to me about sitting behind a desk when he's forty pounds overweight? (263)

> A man, fast approaching thirty, making antler chandeliers and lecturing her—who worked at the Circle!—about life paths. This was a joke. (266)

Giving readers access to Mae's ambiguous thoughts towards Mercer—a character for whom readers are expected to have quite a positive image due to his generosity—is, therefore, one of the strategies used by Eggers to gradually undermine readers' empathy towards the protagonist, creating instead emotional distance from her and, consequently, from the techno-utopian values she incarnates.

3.3.3.2. Voices of dissent: Kalden, Mae's parents, and Mercer

As the story progresses, this anti-empathic distance does nothing but increase, as Eggers additionally introduces other narrative techniques that induce readers to question what is happening at the Circle and ponder whether the company's utopian promises may not hide a dystopian reality. Dystopian novels usually feature protagonists who progressively become aware of the adverse conditions under which they and their own society are living, and this is something the protagonists themselves often manage to convey to everyone around (Moylan xiii), and also to readers. One of the most well-known examples is that of Winston Smith, the protagonist of George Orwell's dystopian classic *1984*, who makes readers aware of the pain to which the citizens of the totalitarian regime of Oceania are subjected. However, this does not apply to *The Circle*, a novel whose protagonist is increasingly committed to the Circle and its values—despite her occasional doubts. However, readers are not left in the shadow for very long, as Eggers soon introduces some secondary characters who call our attention to the naïveté of Mae's point of view and the inappropriateness of her behavior, making readers feel progressively detached from the protagonist's perception of reality and from the values she endorses. Among these characters we find Mae's parents, Mae's ex-boyfriend Mercer, and even one of the creators of the Circle: Ty Gospodinov, who tries to warn Mae of the dangers of Completion[4] disguised as a mysterious and eccentric character named Kalden. In clear contrast to Mae's ideological position, these characters do not readily accept the Circle's policies and technologies; instead, they show more cautious moral stances.

To start with, it is worth focusing on Kalden. Even after having had a few short encounters with him at the Circle's campus, Mae still does not know much about him: she does not know his surname, his occupation within the Circle, nor has she his phone number. At some point, Mae decides to use the Circle's search tools to try to locate him online, only to realize that he does not appear on the company directory. Kalden is, thus, evasive and difficult to get in touch with, and, as Galow points out, he "seems to represent the iconoclasm and unpredictability that the Circle's technology aims to mitigate and manage" (121). Kalden seems to disapprove of many of the things that happen at the

[4] According to one of the characters in the novel, although Completion still remains a riddle even for those who work at the Circle, it seems to refer to the company's aim to connect "services and programs that are just inches apart" (346). In a more pessimistic vein, in his analysis of *The Circle*, Galow suggests that Completion seems to refer to "the moment when every aspect of human existence will be saved and processed by the Circle" (122).

Circle—in fact, he is, according to Galow, "the only person Mae encounters who seems dismissive of Circle culture" (120). In spite of everything, he is on several occasions presented, from Mae's point of view, as trustworthy:

> Everything and everyone else she'd experienced at the Circle hewed to a logical model, a rhythm, but Kalden was the anomaly. His rhythm was different, atonal and strange, but not unpleasant. His face was so open, his eyes liquid, gentle, unassuming, and he spoke so softly that any possibility of threat seemed remote. (Eggers *The Circle* 93)

Thus, even though Mae's co-worker and best friend Annie keeps warning Mae that he could be an "infiltrator of some kind" or a "low grade molester," most of the time the protagonist seems to trust him: "She trusted Kalden, and couldn't believe he had any nefarious intentions. His face had an openness, an unmistakable lack of guile—Mae couldn't quite explain it to Annie, but she had no doubts about him" (172). The fact that she becomes sexually involved with him at some point is also good proof of this.

However, Mae's attitude towards Kalden radically changes as soon as he tries to persuade her that Completion is not a good idea. Kalden first discreetly warns Mae, while she is giving her online viewers a guided tour of the Circle's facilities, that things must be stopped: "Most of what's happening must stop. I'm serious. The Circle is almost complete and Mae, you have to believe me that this will be bad for you, for me, for humanity" (Eggers *The Circle* 323). A few pages further on, we learn that what Kalden means is that should the Circle increase its powers and decide to put its social media tools to the service of the government, it could eventually become a totalitarian monopoly and human beings could end up being deprived of the freedom to opt out. As he puts it:

> Once it's mandatory to have an account, and once all government services are channeled through the Circle, you'll have helped create the world's first tyrannical monopoly. Does it seem like a good idea to you that a private company would control the flow of information? That participation, at their beck and call, is mandatory? (404)

Further on, close to the ending of the novel—and once his true identity has been revealed to both Mae and readers—the two characters meet in private, and once again Kalden warns Mae of the danger of the situation, underscoring the fact that he never intended any of this to happen when he initially devised TruYou:

> Mae, I didn't intend any of this to happen. And it's moving too fast. This idea of Completion, it's far beyond what I had in mind when I started all this, and it's far beyond

> what's right. It has to be brought back into some kind of balance. . . . I was trying to make the web more civil. I was trying to make it more elegant. I got rid of anonymity. I combined a thousand disparate elements into one unified system. But I didn't picture a world where Circle membership was mandatory, where all government and all life was channeled through one network—. (485)

Thus, Kalden is worried about the Circle controlling the flow of information and being able to influence the population at its own wish: "Now, you and I both know that if you can control the flow of information, you can control everything. You can control most of what anyone sees and knows" (Eggers *The Circle* 487). Because he knows that Mae is in a position to influence thousands of online viewers, Kalden asks her to read, when she has the maximum amount of viewers, a document entitled "The Rights of Humans in a Digital Age" (490). The document, which seems to have been written by Kalden himself, warns against the different dehumanizing effects of the Circle's technologies and policies. The text is not reproduced in its totality in the novel. Readers have access, from Mae's perspective, just to some of its passages, as the protagonist scans it quickly, as if what was written in there was not important:

> "We must all have the right to anonymity." "Not every human activity can be measured." "The ceaseless pursuit of data to quantify the value of any endeavor is catastrophic to true understanding." "The barrier between public and private life must remain unbreachable." At the end she found one line, written in red ink: "We must all have the right to disappear." (490)

From the moment Kalden starts to question the Circle and its policies, Mae starts to think of him as a "lunatic," a "spy," a "doomsayer" (Eggers *The Circle* 323-25). Not even when she learns that he and Ty Gospodinov are the same person does she give credit to what he is saying—although she does stop for a while to ponder whether she should actually be scared. Nonetheless, even though Kalden does not manage to convince Mae, he functions to convince readers that things must be stopped. In fact, we could say that he plays the role of moral compass for readers, gradually trying to turn our opinions in his direction as we begin to realize that he could be an insider fighting against the Circle's most dangerous policies. The fact that every time he appears in the novel he tries to hide and make sure nobody sees him points at the possibility of Kalden being an insider. However, perhaps the most enlightening moment in this respect is when he seems to be puzzled at being asked about his supervisors at a Circle reception:

> "I'm just glad my supervisors saw me here," Mae said. "That was my first priority. Do you have to be seen here by a supervisor or anything?"
>
> "Supervisor?" For a moment, Kalden looked at her as if she'd just said something in a familiar and yet incomprehensible language. "Oh yeah," he said, nodding. "They saw me here. I took care of that." (214)

By portraying Kalden as reacting awkwardly when hearing the word "supervisor," Eggers creates dramatic irony and leads us to suspect he could belong to the Circle's managerial team. The revelation of Kalden's true identity close to the end of the novel is key in this respect. Readers' suspicions are confirmed and they may realize that if the very same person who has created the company is warning that it could become a tyrannical monopoly in which human beings would not have the option of opting out, his warnings deserve some attention. The above-mentioned fact that Kalden is presented as trustworthy from Mae's point of view, in spite of being at times unreachable and eccentric, may also help readers to reach this conclusion.

However, apart from Kalden, other characters help readers to question Mae's attitude and perspective and, by extension, the Circle's values and technologies. This is certainly the case of Mae's parents and her ex-boyfriend Mercer, who are Mae's main connection with the world outside the Circle's physical and virtual campuses. By highlighting the inappropriateness of Mae's behavior, these characters denounce the dehumanizing effects that the technologies described in the novel have on Mae—and, one can infer, on most of the citizens of the society depicted in the novel.[5] In the case of Mae's parents, they seem to be, at the beginning of the novel, very proud of their daughter having got a job at the most important company in the country, and they become even prouder when they learn that Mae's health insurance is going to pay for her father's multiple sclerosis treatment. However, as soon as she starts working for the Circle, Mae's behavior starts to change, something that her parents do not like. Under the pressure of her supervisors, who tell her that being active online is an intrinsic part of her job, Mae keeps posting things on social media and checking her phone while she is with her parents. Besides, her phone keeps beeping, which is something that upsets her mother, as evidenced by the following quotation from a family dinner conversation: "'I was going to thank you, Mae, for all you've done to improve your father's health, and my own

[5] This is another aspect in which *The Circle* resembles other dystopian novels, as these novels usually denounce the dehumanization to which the citizens of a particular totalitarian regime are subjected.

sanity.' . . . She paused, as if expecting a buzz to sound at any moment" (Eggers *The Circle* 258). In this quotation, an ironic heterodiegetic narrator calls our attention to the sense of unease that Mae's mother experiences when trying to talk to her daughter, who seems to be most concerned about what is going on in her mobile device. In a similar line, in her work *Alone Together*, psychologist and sociologist Sherry Turkle denounces that, in contemporary society, mobile technology has negatively affected our face-to-face interactions. As she puts it:

> Mobile technology has made each of us "pauseable." Our face-to-face conversations are routinely interrupted by incoming calls and text messages. In the world of paper mail, it was unacceptable for a colleague to read his or her correspondence during a meeting. In the new etiquette, turning away from those in front of you to answer a mobile phone or respond to a text has become close to the norm. When someone holds a phone, it can be hard to know if you have that person's attention. (161)

For his part, her ex-boyfriend Mercer Medeiros also tries to make Mae realize that her behavior has changed since she started working at the Circle. Thus, after the above-mentioned family dinner in which Mae keeps checking her phone, Mercer blames her for being immersed in the virtual world and forgetting about the tangible world and those who care about her. In his own words: "You're at a table with three humans, all of whom are looking at you and trying to talk to you, and you're staring at a screen, searching for strangers in Dubai." Furthermore, Mercer calls Mae's attention to the fact that she is so focused on her virtual self that she is "not *doing* anything interesting anymore" (Eggers *The Circle* 262; emphasis in the original). As he puts it: "You're not seeing anything, saying anything. The weird paradox is that you think you're at the center of things, and that makes your opinions more valuable, but you yourself are becoming less vibrant. I bet you haven't done anything offscreen in months. Have you?" (262). Mercer also regrets that they do not talk directly anymore: "Every time I see or hear from you, it's through this filter. You send me links, you quote someone talking about me, you say you saw a picture of me on someone's wall… It's always this third-party assault" (131). Similarly, later on, in a letter that he writes to Mae—only reproduced partially in the novel because, once again, Mae considers it is not worth reading it—Mercer predicts that they will be very soon "too far apart to communicate" (369), no matter that they have at their disposal technology that allows them to be connected at all times. Furthermore, he foresees that, if things continue to be the way they are now, there will soon be two different groups of people in society: those who comply with the way of life imposed by the Circle and those

who dissent. According to Mercer, Mae and her people will just "live, willingly, joyfully, under constant surveillance, watching each other always, commenting on each other, voting and liking and disliking each other, smiling and frowning, and otherwise doing nothing much else" (370).

Mercer's views remind us of some of the arguments put forward by some critics of the posthuman, especially Hayles's view that, as a result of the introduction of a wide range of virtual reality technologies, human beings in contemporary society increasingly tend to leave aside more physical aspects of their lives and to focus instead on their virtual selves (see Hayles *How We Became* 1-49). The "condition of virtuality" arises, according to Hayles, as a direct consequence of human beings thinking of information as "more mobile, more important, more *essential* than material forms" (18, 19; emphasis in the original). Hayles stresses, nevertheless, the need to look for "the erasures that went into creating the condition of virtuality" (20) and ultimately argues for an embodied version of the posthuman that welcomes the opportunities offered by information technologies without being carried away by fantasies of infinite power and disembodied immortality (5). In line with Hayles' view, Eggers's strategies in the novel point to embodiment over virtuality, explicitly focusing on some characters—Mae's parents and Mercer, more specifically—who stress the need to go back to the real and to enjoy the here and now.

Apart from denouncing that Mae's attitude has changed since she has started working for the Circle, in the above-mentioned letter Mercer also adopts a similar attitude to that of Kalden and warns Mae against the totalitarianism that the Circle is fostering. He expresses his wish to live free from the constant surveillance that the Circle is enforcing and vindicates that, in this totalitarian society, human beings "need options for opting out" (Eggers *The Circle* 371). In a second letter that he sends to Mae—reproduced in whole in the novel—Mercer clearly expresses, once again, both his distress for how things have gone totally out of control and his wish to remain at the margins:

> So I'm gone. By the time you read this, I'll be off the grid, and I expect that others will join me. In fact, I know others will join me. We'll be living underground, and in the desert, in the woods. We'll be like refugees, or hermits, some unfortunate but necessary combination of the two. Because this is what we are. I expect this is some second great schism, where two humanities will live, apart but parallel. There will be those who live under the surveillance dome you're helping to create, and those who live, or try to live, apart from it. I'm scared to death for us all. (436-37)

Not only is Mae dismissive of Mercer's warnings, but she is also determined to prove to him that he cannot remain off the grid for very long because, thanks to the Circle's technology (especially its cutting-edge social media tools and surveillance devices), he can be found in just a few minutes no matter where he is hiding. In fact, with the help of her watchers and the Circle's advanced technology, in about ten minutes Mae manages to locate him in Oregon Town. When he realizes that he is being watched and recorded, he tries to run away. However, Mae decides not to stop until Mercer has acknowledged the Circle's superior powers: "But something about his inability to give in, to admit defeat, or to at least acknowledge the incredible power of the technology at Mae's command… she knew she couldn't give up until she had received some sense of his acquiescence" (Eggers *The Circle* 464). Consequently, Mae gives her viewers the order to start a persecution, which ends in Mercer's tragic death after his car drives off a cliff.[6] Mercer's death close to the end of the novel is perhaps the clearest symbol for the impossibility of opting out of this system. As Hobbs puts it, "the death of the novel's strongest voice of dissent signals the impossibility of escaping the company's power, as soft and non-violent as it may appear: the only options are to submit or to die." The fact that both Kalden and Mae's parents, the other main voices of dissent in the story, suddenly vanish as we approach the end of the novel, further reinforces this idea.

Because the society depicted in the novel is not too distant from our present day one, it would be legitimate to think that, with these narrative choices, the novel is denouncing the fact that, in contemporary society, human beings are often deprived of the freedom to opt out of digital culture and forced to assimilate into it so as not to feel excluded. Therefore, the novel puts to the test Bostrom's argument that "people should have the right to choose which enhancement technologies, if any, they want to use" ("Transhumanist Values" 11) and points at the fact that, although transhumanist critics and philosophers advocate for free choice in the use of enhancement technologies, very often human beings do not have this choice once social networks and surveillance devices have taken over our social roles and exposed our private lives. As mentioned earlier, in his book *Digital Vertigo*, Keen denounces the impossibility of opting out the online social revolution. In a similar vein, as early as 1954, French philosopher and sociologist Jacques

---

[6] A parallel can be drawn between this scene and the scene of Powers's *Generosity* in which, upon turning on the TV of the motel room where they are spending the night and realizing that the police have launched a manhunt for her and Russell, Thassa takes her own life.

Ellul already warned that, in the technological society, man is "unable to remain for very long at variance with his milieu" (332-33). According to Ellul, in a society in which all human techniques work towards adapting man to the mass (405-06), the individual is presented with just two possibilities:

> either he remains what he was, in which case he becomes more and more unadapted, neurotic, and inefficient, loses his possibilities of subsistence, and is at last tossed on the social rubbish heap, whatever his talents may be; or he adapts himself to the new sociological organism, which becomes his world, and he becomes unable to live except in a mass society. (334)

3.3.3.3. Mottos and symbols

The idea that the society depicted in the novel might be undergoing a movement towards totalitarianism—due to the Circle's increasing powers and the citizens' blind acceptance of its transhumanist technologies and policies—is further reinforced by the use of other narrative strategies that are also frequently found in well-known dystopian novels. One of these strategies, which is deliberately used by Eggers as a nod to Orwell's *1984* (Eggers in Craps and Bex 556), is the use of mottos. The words "SECRETS ARE LIES / SHARING IS CARING / PRIVACY IS THEFT" (Eggers *The Circle* 305) are repeated on several occasions throughout the story, and they remind us of the three well-known and contradictory slogans of the English Socialist Party in Orwell's dystopia, which also appear repeatedly: "War is peace. Freedom is slavery. Ignorance is strength" (6). By inviting readers to draw a connection between the two texts, both of which provide evidence of the subtlety of totalitarian strategies in our mass-mediated world, Eggers underscores the inherently totalitarian character of the Circle's ideology and, consequently, further increases the distance between readers and the Circle's technologies and policies.

The use of symbols is another strategy used by Eggers to reinforce this idea. In her work *A Dictionary of Stylistics*, Katie Wales defines the term symbol as "a sign, whether visual or verbal, which stands for something else within a speech community" (408). According to Wales, different fields within each culture develop their own particular sets of symbols or symbolism. Literature, for example, makes use of both general and literary symbols, which readers need to decipher in order to gain a better understanding of the literary work as a whole (408). However, Tzvetan Todorov had

already gone one step further when arguing that the indirect production of meaning that qualifies the use of the symbol is a *dominant* feature of literary discourse (12; my emphasis). It is indeed difficult to find a literary work that does not make use of symbolism, and this clearly includes dystopian novels. In Orwell's *1984*, Big Brother and telescreens stand as symbols of power and surveillance in the totalitarian state of Oceania. In this respect, *The Circle* is no exception. Thus, close to the end of the novel, the Three Wise Men—this is the name the three creators and main figures of the company receive in the novel—meet in order to put in the same fish tank some creatures brought by Stenton "from the unmapped depths of the Marianas Trench" (Eggers *The Circle* 473). More specifically, they are an octopus, a male seahorse and his progeny, and a shark.

In his study of Eggers's fiction, Galow describes this scene as "an obviously symbolic moment," and establishes a parallelism between each of these creatures and each of the Three Wise Men. For Galow, the seahorse is "the symbolic corollary to Ty Gospodinov, who hides while his babies float aimlessly in a group above (the Circlers)." The octopus, on its part, represents Eamon Bailey, "who is constantly exploring with his tentacles, as if he wants to know about every inch of the tank." Finally, the shark stands for Tom Stenton, who "seems able to consume nearly anything" (124) and who, as Galow argues, is "motivated primarily by power and money" and, thus, "represents the greatest threat to the utopian dream of the Circle community" (123). When the three creatures are put together in the aquarium—an action which could be interpreted as a metaphor for Completion—the shark eats not only the seahorses and the octopus, but also the seaweed, the coral, and the anemones within the tank. With this symbolic scene, Eggers seems to be suggesting that, even though the intentions behind the devising of the Circle's technologies and policies might have been noble, these good intentions are always overshadowed by economic interests, and human beings often end up compromising their rights and freedoms for the benefit of those in power.

3.3.3.4. Irony and the heterodiegetic narrator

Another way in which Eggers incites readers to question the Circle's techno-utopianism is by resorting to irony. In his 1974 classic *A Rhetoric of Irony*, Wayne C. Booth already pointed at the difficulty of defining irony. In his own words: "There is no agreement among critics about what irony is" (ix). Thus, Booth stressed the futility of trying to fix a proper meaning for the word irony and set out to "clarify," instead, what he regarded as

"one particular operation that is in fact performed together by authors and readers, regardless of their literary or critical presuppositions" (8). In a similar vein, in her 1992 paper "The Complex Functions of Irony," Linda Hutcheon differentiates between earlier definitions of irony—which mainly focus, according to her, on "the substitution of an (opposite) intended or 'ironic' meaning for a literal one" (219)—and more recent critical views, which regard irony as "a dynamic relationship, a communicative process," not only between ironist and interpreter but also between different meanings (220). This idea is also shared by Thijs Vleugel, who, in his 2004 paper "Meaning Irony: The Ethics of Irony," claims that "irony not only happens through the semantic interplay between what is 'said' and what remains 'unsaid,' but also through the ethical interplay between writer, text, and reader" (1).

In her paper, Hutcheon claims the existence of a "critical evaluative edge" that is constant in all the different functions of irony (231)—which she classifies according to their higher or lower degree of critical engagement. Thus, for Hutcheon, irony may be just a marker of verbal and structural complexity, it may perform a ludic or playful function—in this case it is related to humor and wit—it may function as a distancing, self-deprecating, or defense mechanism, or it may have an offensive function (222-26). Similarly, Vleugel claims that what makes irony an interesting communicative strategy is precisely that it makes reference "not just to opposites but to moral alternatives, and demands of the reader to take a position among them" (2). Therefore, the interpreter should remain, according to Vleugel, actively involved and ethically engaged with the text (9). Summarizing Booth's ideas, Vleugel goes one step further and argues that texts tend to present, nevertheless, certain markers which "point to the presence of ironic meaning and encourage the reader to look for the *unsaid* behind and in what is actually *said*" (11; emphasis in the original). More specifically, "straightforward warnings in the author's own voice," the violation of shared knowledge—be it popular expressions, historical facts or conventional judgements—internal contradictions within a work, a clash between styles, or "conflicts of belief"—whenever there is a conflict between the beliefs expressed and the beliefs readers hold and suspect the writer of holding (Vleugel 10-11; see also Booth 53-76).

Bearing in mind Hutcheon, Vleugel, and Booth's ideas, this section traces the different ways in which irony is present in *The Circle*, as well as how it affects the way readers interpret the text. In this last respect, this chapter argues that irony is mostly used

in the story as a distancing mechanism that places readers in a critical position towards the Circle's techno-utopianism. As for the different textual indicators that may suggest the presence of irony, Booth's classification falls a little bit short. In Eggers's novel, we find not only conflicts of facts and beliefs, but also witty comments, parenthetical remarks, and other mechanisms that call the reader's attention to the different ways in which the company's technologies are negatively altering the way the characters in the novel think and behave. In any case, if there is a common element to any possible type of irony, it is the necessary existence of two levels of knowledge. Frequently played by the narrator (or by the author's release or withdrawal of information), the ironizer shares with attentive readers more knowledge than the one available to the protagonist(s) or other characters in the story (the ironized), thus favoring the complicity between ironizer and reader that characterizes the use of irony in written narratives.

In *The Circle*, irony is used, first, to make readers aware of the fact that some of its characters have become utterly dependent on the company's technologies, to the point that they find life without them almost unbearable. Perhaps the clearest example of this is when the narrator portrays Mae as feeling unaware of her progressive addiction to the new technologies, to the point of feeling incomplete without her prosthetic wrist monitors, as revealed in the following quotation:

> It had taken a few weeks to get used to sleeping with her wrist monitors—she'd scratched her face one night, and cracked her right screen another—but Circle engineers had improved the design, replacing the rigid screens with more flexible, unbreakable ones, and now she felt incomplete without them. (Eggers *The Circle* 335)

Here, readers may wonder how Mae can miss something that paradoxically, has even caused her physical pain, as evidenced by the narrator's parenthetical remark in the first and second lines. Mae's co-worker and best friend Annie is another character who exemplifies the increasing dependence that human beings have on technological innovations, as at some point in the novel she is shocked to find that Mae has come to lunch without her phone and responds in the following way: "Mae, you are incredible. You're so focused and together, but then you have these weird spacy lapses. You came to lunch without your phone? . . . No. It's what I love about you. You're like part human, part rainbow" (113). By portraying a character who disproportionately reacts at learning that Mae has not taken her phone with her to lunch—the last sentence of the quotation is key in this respect—the novel invites readers to share a superior position and distance

themselves from Annie's viewpoint, and to reflect on the fact that nowadays human beings have become so enslaved by technological devices that, very often, they feel there is something missing when they are not linked to their technological prostheses. Many critics have increasingly engaged with this issue in recent years. For example, Mahon has suggested that, nowadays, losing our connection to the web feels like losing an intrinsic part of ourselves:

> Imagine that tomorrow all phones and data networks were to somehow just suddenly vanish, and you were never able to use your smartphone ever again: no more Google, no more Internet, no more social networking, no more reminders, no more communication or fact-checking or problem-solving on the fly. . . . Might it not feel a little like you've lost a part of yourself? Maybe some IQ points? Some knowledge? A part of your memory? A piece of your identity? (8)

Related to this is the fact that some of the characters of the novel are so used to having unlimited access to information, thanks to the Circle's technologies, that they react strongly when they do not have access to the information they want or need. The fact that Mae gets angry and frustrated when she is not able to track Kalden using the Circle's search tools, for example, is good proof of our human increasing dependence on digital technologies: "But where was he? What had been intriguing on Monday and Tuesday was approaching annoying by Wednesday and exasperating by Thursday. His invisibility began to feel intentional and even aggressive" (Eggers *The Circle* 173). Very close to the end of the novel, Mae has a fretful *revelation* when she finally seems to realize that the source of the anxiety she has been experiencing throughout the story is not having access to the information she wants:

> The tear was not knowing. Not knowing who would love her and for how long. The tear was the madness of not knowing—not knowing who Kalden was, not knowing Mercer's mind, Annie's mind, her plans. . . . It was not knowing that was the seed of madness, loneliness, suspicion, fear. (470)

The fact that Mae attributes her malaise to a lack of knowledge is particularly ironic: she does not realize that "not knowing" is what makes her still human. Her belief that "not knowing" is the "seed of madness" thus becomes ironic proof for the reader that she is actually getting mad.

Furthermore, earlier in the novel readers witness some of the negative side effects of characters having an almost unlimited access to information. Thus, the novel shows

how Annie, when volunteering to test a new Circle project named "PastPerfect" (Eggers *The Circle* 351), discovers some terrible things about her parents' and her family's past. By conveying Annie's restlessness and disappointment at finding out that some of her ancestors were slave-owners, and at watching footages of her own parents being adulterous or seeing a homeless man drowning in the sea and doing nothing to prevent it, the novel invites us to ponder whether human beings really need technology that allows them to have access to (almost all possible) information. Furthermore, it dismisses Mae's view that knowledge always helps us achieve a higher state of mind, making the above-mentioned claim ironic to the eyes of readers. This could be an example of what Booth refers to as a "conflict of facts" (62), or an instance of the literary work providing the necessary background knowledge for "establishing that a speaker's ignorance [Mae's, in this case] is not shared by the author" (61).

In line with what has been discussed in earlier sections of this chapter, irony is also used in the novel to denounce the disembodiment fostered by some specific human enhancement technologies. The novel shows how, as a result of being in constant contact with the Circle's technologies—and perhaps more prominently with its social media tools—some of the characters in the novel are led to disregard more physical aspects of their lives in favor of virtuality, ultimately distancing themselves from the here and now and from those around them. More specifically, the novel proves, first of all, that some characters are more focused on sharing everything they are thinking or doing on social networks than on enjoying the present moment. A clear example of this is when, while watching a film with her parents, Mae keeps sharing her thoughts on social media: "As her parents watched the film, Mae tried to make the time more interesting by sending a series of zings about it, tracking and commenting on the number of moments offensive to the LGTB community" (Eggers *The Circle* 368). Here, readers may share the narrator's ironic mood on Mae's behavior, who, instead of focusing on the film and enjoying the company of her parents, is more interested in discussing it with thousands of strangers online.

Some of the characters in the novel even seem to believe that, if something is not online, it never happened. For example, at some point Bailey severely reprimands Mae for going kayaking and not posting anything online to document it: "[Y]ou've said that you often kayak in the bay, and you'd never documented these trips. You hadn't joined any Circle clubs devoted to kayaking, and you hadn't posted accounts, photos, video, or

comments. Have you been doing these kayak trips under the auspices of the CIA?" (Eggers *The Circle* 300). By portraying a character who overly emphasizes the need to share such a private and individual experience, as well as by introducing a witty reference to the CIA, Eggers also denounces the fact that human beings seem to be forgetting about enjoying the present moment and focusing instead on leading virtual lives in cyberspace. Remarkably, Lanier attributes this human need to share everything online to some "behavior modification" techniques deliberately designed by social media corporations to make their users addicted and easy to manipulate:

> The core process that allows social media to make money and that also does the damage to society is *behavior modification*. Behavior modification entails methodical techniques that change behavioral patterns in animals and people. It can be used to treat addictions, but it can also be used to create them. (*Ten Arguments* 10; emphasis in the original)

Thus, according to this critic, by providing their users with "addictive pleasure and reward patterns" (11)—or, to use Facebook's founding president Sean Parker's words, with "dopamine hit[s]" (qtd. in Lanier 8)—social media corporations induce their users to enter the endless sharing loop. As Lanier puts it: "When people get a flattering response in exchange for posting something on social media, they get in the habit of posting more" (12).[7]

In line with Lanier's argument, the novel ironically shows that the characters' main objective behind posting everything online is, indeed, to win the approval of their online followers. From the smile and frown buttons available on social media, to "PartiRank"—"an algorithm-generated number that takes into account all your activity in the InnerCircle" (Eggers *The Circle* 101) and ranks Circlers in terms of their popularity—the Circle counts with a whole array of virtual instruments designed to assess its users' online social performance. This conditioning process results in the increasingly more childish and non-critical responses of the Circle's users. From its ironic position, the narrator warns readers that these technological instruments can, ironically, lead its users to neglect their closest relationships in the real world. Thus, Mae is, throughout the novel, increasingly concerned with winning the approval of her (often unknown) followers and fellow Circlers and reaching the top of the PartiRank, to the extent that, close to the end

[7] Nevertheless, as Lanier argues, positive rewards are by no means the only techniques used by social media corporations to promote user addiction. As this critic states: "[U]npleasant feedback can play as much of a role in addiction and sneaky behavior modification as the pleasant kind" (12).

of the book, she proves to be unconcerned about having lost touch with her former beloved ones:

> Mae walked toward the water. She thought of Mercer and saw him as a shadow, quickly disappearing. She hadn't heard from him, or Annie, since the talk, and she didn't care. Her parents hadn't said a word, and might not have seen her performance, and she found herself unconcerned. (396)

In a similar vein, the novel also denounces that, in the society it depicts, human relationships are increasingly filtered through online tools, while physical interaction seems to be a thing of the past. For the characters of the novel, communication progressively takes place in the virtual realm—the fact that Mae is most of the time only able to reach her friend Annie through her phone is good proof of this—while face-to-face interactions become less and less significant. In this last respect, the fact that Mae and her coworker Francis kiss by the "Paleozoic" and the "Roman Empire"—each of the buildings in the Circle's campus is named after a different historical era—is also symbolically ironic: "That week, she and Francis ate lunch together often, even if briefly, and after they ate, they found a place to lean against each other and kiss. Once it was under a fire exit behind the Paleozoic. Once it was in the Roman Empire, behind the paddle courts" (Eggers *The Circle* 118). A physical action, such as kissing somebody, needs to take place by the buildings that receive the names of pre-technological eras, which ultimately conveys the idea that, once social media tools have taken over our social roles, physical contact will become a thing of the past.

Thanks to the ironic heterodiegetic narrator, readers also realize that, in the society depicted in the novel, even the problems that require a more humane solution are addressed through digital media. Perhaps this can be best seen when Mae, instead of meeting up with and trying to comfort her friend Annie—who has just discovered terrible things about her parents and her family's past and is on the brink of a nervous breakdown—decides to tell everyone around so that they can send Annie their support electronically:

> Watching him, the solution to Annie's problem seemed obvious. She needed support. Annie needed to know she wasn't alone. And then it all clicked. Of course the solution was built into the Circle itself. There were millions of people out there who no doubt would stand behind Annie, and would show their support in myriad unexpected and heartfelt ways. Suffering is only suffering if it's done in silence, in solitude. Pain

> experienced in public, in view of loving millions, was no longer pain. It was communion. (Eggers *The Circle* 444-45)

In fact, as readers aware of the irony might expect, after thousands of people send Annie smiles and messages, to which she never replies, she disappears and Mae is, from then on, unable to contact her. A few pages further on, readers learn that, far from recovering thanks to her online followers' support, Annie has collapsed at her desk and is now in a coma, a condition probably caused, according to her doctor, "by stress, or shock, or simple exhaustion" (495).

Something similar happens when Mae's college friend Tania Schwartz—who was paradoxically "never an activist in school"—asks Mae to join an initiative called "We Hear You Ana María" (Eggers *The Circle* 244). The initiative aims to support Ana María Herrera, a woman who was captured by "a paramilitary group in Guatemala" but finally managed to escape, letting the world know about "ritual rapes, . . . teenage girls being made concubines, and the murders of those who would not cooperate." Tania encourages Circle users to send their support to Ana María so that "*she knows she has friends all over the world who will not accept this*" (244; emphasis in the original). Paradoxically enough, the only way to send her support seems to be by means of pressing a smile button available on the initiative's online site. When Mae clicks on the buttons, she receives an auto-reply message thanking her and letting her know that she is "the 24,726th person to send a smile to Ana María." All these smiles, readers learn, are sent directly to Ana María's phone. At this point, we may well wonder whether receiving over twenty thousand smiles on her phone can really help Ana María get over her trauma. Furthermore, we may realize that this flood of messages could overshadow the messages sent to her by the people who really know and care about her.

As well as sending a smile to Ana María, Circlers are given the option to click a frown button to show their disapproval of "the Central Guatemalan Security Forces" (Eggers *The Circle* 244). Mae hesitates briefly, "knowing the gravity of what she was about to do—to come out against these rapists and murderers," but she finally clicks on the button and becomes "the 19,282nd to send a frown to the paramilitaries." Even though right after pushing the button Mae learns that the frowns will not reach the Central Guatemalan Security Forces—as Tania's brother is still working on a way to get the frowns to them—she still stops to consider the potential implications of her action, which is ironic. Thus, she seems to be concerned about having "possibly made a group of

powerful enemies in Guatemala" and convinced that, following her example, "thousands of SeeChange watchers" will join the online initiative, thus bringing about a positive change in the reality of Guatemala (245).

There is yet another example of irony being used to denounce the disembodiment and depersonalization fostered by the Circle's technologies. Once Mae goes transparent, millions of Circle users start having access to both her everyday life at the Circle and her life outside the company. The first time she goes back to her parents' home being transparent, the protagonist and her parents discuss, in front of her viewers, "the differences in her father's treatment before and after they became insured through the Circle." Shortly afterwards, her father falls when trying to make his way upstairs, and thousands of viewers set out to send them messages of support, something that Mae really appreciates: "He fell awkwardly while trying to make his way upstairs, and afterward there was a flood of messages from concerned viewers, followed by thousands of smiles from all over the world. . . . Mae cried reading the messages; it was a flood of love" (Eggers *The Circle* 364). By means of ironizing Mae's thoughts—the words "a flood of love" clearly sound like an exaggeration—the narrator incites readers to ponder to what extent thousands of messages from unknown online followers can help Mae or her parents to cope with her father's illness. As ironically expected, all those messages will be useful in the same way as the 24,726 smiles sent to Ana María could do very little to help her overcome her trauma or the messages sent to Annie by unknown people could help her to feel better.

Thus, Mae's viewers send messages to her parents "suggesting new drug combinations, new physical therapy regimens, new doctors, experimental treatments" and "sharing their own stories, so many living with MS themselves. Others . . . living with osteoporosis, with Bell's palsy, with Crohn's disease" (Eggers *The Circle* 364), to the point that it is too much and Mae's parents cannot take it anymore. The second time the protagonist goes home being transparent, her parents take the chance to send a message to her viewers, kindly asking them to stop the flood of messages:

> "And again, we appreciate the outpouring. But even if we spent one minute on each response, that's a thousand minutes. Think of it: sixteen hours just for some basic response to the messages!" . . . "Just"—and he closed his eyes and squeezed them tight—"send your good wishes, your good vibes, our way. No need to email or zing or anything. Just good thoughts. Send 'em through the air. That's all we ask." (367)

Although Mae tries to downplay the issue, the request of Mae's parents also calls the reader's attention to the disembodiment fostered by the Circle's technologies and emphasizes instead the need to go back to the real.

Finally, irony is also used in the novel to show how, as a result of being in constant contact with the Circle's technologies, some of the characters seem to alter their behavior in negative (and sometimes silly) ways. For instance, at some point Mae and Francis meet for lunch at the Glass Eatery at the Circle. When Mae gets there, she sees Francis sitting "a few levels above." Mae tries, to no avail, to get Francis's attention, and finally resorts to using her smartphone to text him, feeling, the narrator explains, a little bit silly: "She waved, but couldn't get his attention. She yelled up to him, as discreetly as she could, to no avail. Then, feeling foolish, she texted him, and watched as he received the text, looked around the cafeteria, found her, and waved" (Eggers *The Circle* 85). Even if she is aware that she should try to go where Francis is instead of just texting him, she still resorts to using her phone—feeling, nonetheless, foolish—to get his attention. The fact that some Circlers face walls when wearing their retinals, in order to see the images more clearly, is also highly ironic, and also makes readers realize the dehumanization sometimes brought about by technological innovations:

> He was standing in the corner of his office, facing the wall. She knocked lightly and without turning, he raised his index finger, asking for a moment. Mae watched him, assuming he was on a call, and stood patiently, silently, until she realized he was using his retinals and wanted a blank background. She'd been seeing Circlers occasionally doing this—facing walls, so the images on their retinal displays could be seen more clearly. (146)

The narrator also uses irony to denounce the fact that human beings are becoming more and more impatient, mainly due to the accelerated pace promoted by technological developments, as can be traced in the following quotations:

> Mae checked the time and saw there was a new notice from Dr. Villalobos. She asked Mae to come visit as soon as she could. *Nothing urgent*, she said. *But it should be today*. (Eggers *The Circle* 339; emphasis in the original)

> It took agonizingly long—three minutes or so—but soon all the available private drones in the area, eleven of them, were in the air. (462)

In the first quotation, the narrator's italicized words call our attention to and ironize on Dr. Villalobos' altered perception of time: what she has to tell Mae is not urgent, according to her, but still, it cannot wait until the following day. In the second quotation, it is the contrast between Mae's perspective, to which readers have access by means of the use of free indirect discourse, and the voice of the heterodiegetic narrator, which is introduced in parenthetical mode and questions the protagonist's perception of time, which produces irony. Overall, these quotations ultimately uncover and denounce the conception of time that seems to predominate in contemporary society as a result of the population being in contact with the new technologies. In the preface to the 2010 edition of his work *The Rise of the Network Society*, Castells writes about the contemporary "trend to reach timeless time." This critic defines this trend as

> the social practice that aims at negating sequence to install ourselves in perennial simultaneity and simultaneous ubiquity. Why do people rush all the time? Because they can beat their time constraints, or so they think. Because the availability of new communication and transportation technologies encourages them to pursue the mirage of transcending time. (xli)

This technologically-induced acceleration of time has also negative consequences for human relationships, as evidenced by the fact that Mae and Mercer are not able to have a normal conversation anymore because Mae has become just too impatient:

> "Mae, how about if you just let me finish my sentence?" . . .
> "But you talk so *slow*."
> "I talk normally. You've just gotten impatient." (Eggers *The Circle* 131; emphasis in the original)

But perhaps most notable are the alterations in behavior fostered by the Circle's surveillance devices. Once Mae's life begins to be broadcasted online thanks to SeeChange cameras, the narrator calls readers' attention to some slight alterations in the protagonist's behavior. Readers realize that she is now a little more concerned about the clothes she wears to work, thinks more about where she scratches, and even ponders when to blow her nose or how. Furthermore, at some point when she is at her parents' house, Mae gives a toast before dinner, something that, ironically, "she'd never done before and which she hoped her parents wouldn't ruin by acting like it was unusual" (Eggers *The Circle* 366). Being on the spotlight 24/7, Mae sees herself forced to adopt a performed behavior and even conceal her real feelings: "With a wide smile—for she was surely

visible on three or four outdoor SeeChanges—she took a breath. This was a new skill she'd acquired, the ability to look, to the outside world, utterly serene and even cheerful, while, in her skull, all was chaos" (324-25). However, Mae is not the only character who sees herself forced to adjust her behavior while she is on camera. Her parents feel this pressure too: "As if remembering that they were on camera, and that their daughter was now a more visible and important person, her parents adjusted their behavior" (365). Even Georgia, the biologist in charge of the Circle's aquarium, is concerned about the image she projects on camera: "but then, as if remembering they were on camera, adopted a studied, performative tone. 'Hello Mae, I'm Georgia, and I'll be feeding Mr. Stenton's shark now'" (316).

In spite of everything, the protagonist believes that being constantly watched improves her behavior and makes her a better person and remains, from beginning to end, a fervent supporter of SeeChange:

> And serving them while transparent made her far better. She expected this. She was apprised by Stewart that when thousands, or even millions, are watching, you perform your best self. You are cheerier, more positive, more polite, more generous, more inquisitive. But he had not told her of the smaller, improving alterations to her behavior. (Eggers *The Circle* 330-31)

This is highly ironic, as readers soon realize that Mae does not perform her best self but become a completely different person when she knows she is being watched. Overall, as this section has set out to demonstrate, the distancing mechanism of irony helps readers to realize the ways in which the Circle's technologies negatively alter the ways the characters in the novel think and behave. This ultimately has the effect of further increasing the distance between readers and Mae's (and the Circle's) techno-utopian ideology.

3.4. CONCLUSION

In sum, when *The Circle* is approached from the double perspective of transhumanism and critical posthumanism, its struggling status between transhumanist utopia and technological dystopia becomes most evident. As happened with *Generosity*, Eggers's novel fictionalizes transhumanist arguments on the pertinence of using technology—in

particular, social media tools and surveillance devices—to enhance human capabilities, while also voicing some critical posthumanist concerns, such as the fear the use of these technologies for enhancement purposes may bring about disembodiment and dehumanization. Perhaps Eggers's greatest achievement in *The Circle* is his choice to raise readers' expectations regarding the Circle's digital technologies and their revolutionary applications, only to then shatter them by providing a turning of events where these technologies negatively affect the lives of his characters. This ultimately has the effect of fostering a critical reflection, on the part of his readers, on the development and use of these technologies for enhancement purposes.

Thus, as this chapter has set out to demonstrate, *The Circle* may seem to be, at first glance, a reflection on how different digital technologies may help to improve our everyday lives. Remarkably, the technologies developed by the company that gives the novel its name are only a slightly modernized version of the ones already existing in contemporary society. As has been argued, some of the narrative strategies used by Eggers—in particular the introduction of a heterodiegetic narrator who focalizes through the techno-utopian protagonist and makes abundant use of free indirect discourse—first awaken readers to the possibilities that the Circle's social media tools and surveillance devices offer for implementing transhumanist aims. In this last respect, special attention is paid to the ways in which these technologies help to build an interconnected, safer, more egalitarian, and democratic society.

Nevertheless, readers may not be fully able to identify with the Circle's transhumanist approach because the same narrative strategies are also used to create ironic distance towards the techno-utopian protagonist and to convey her sporadic hesitations regarding the Circle's technologies and their revolutionary applications. Furthermore, as the story progresses, other narrative strategies are introduced that help readers realize that the techno-utopia may have become a dystopia, further inciting us to distance ourselves from the Circle and its transhumanist values. Among these narrative strategies, we find the introduction of voices of dissent, the witty comments of an ironic heterodiegetic narrator, and the use of some mottos and symbols. By making use of these strategies, Eggers calls our attention to the disembodiment and dehumanization that the Circle's social media tools and surveillance devices may bring about. In particular, the writer envisions different ways in which these technologies may threaten human freedom and privacy and lead human beings to neglect more physical aspects of their lives in favor

of virtuality. Overall, against the disembodiment and dehumanization fostered by the Circle's digital technologies, Eggers's novel stresses the need to live in, and to enjoy, the here and now, and to build solid relationships with the people we love.

4. Transhumanism, Trauma, and the Ethics of Cryonics in Don DeLillo's *Zero K* (2016)

4.1. INTRODUCTION

4.1.1. Don DeLillo: from *Americana* (1971) to *Zero K* (2016)

Another renowned North-American writer who has recently engaged with the topic of the technological augmentation and improvement of the human condition is Donald Richard DeLillo—best known as Don DeLillo. Born in New York in 1936, DeLillo published his first novel, *Americana*, in 1971. Since then, he has kept on writing novels at a fast pace, and an incredible amount of scholarly work on the writer has been produced. Surprising as it may seem, the writer has not always enjoyed the public and critical acclaim he enjoys today. In the introduction to his 1991 work *Introducing Don DeLillo*—one of the first monographic volumes on the work of the writer—Frank Lentricchia claims that DeLillo remained an "obscure object of acclaim, both in and out of the academy" until the publication of his eight novel, *White Noise*, in 1985 (1). In a similar vein, John N. Duvall affirms in his introduction to *The Cambridge Companion to Don DeLillo* (2008) that it was precisely the publication of *White Noise* that earned the writer a place among the most relevant novelists of the United States who were, according to him, Thomas Pynchon, Toni Morrison, Philip Roth, and John Updike (i).

Apart from his stylistic uniqueness (see, e.g., Laist 75), DeLillo has been praised for his ability to predict and interpret different aspects of the contemporary world. In Duvall's words, "his fiction seems to anticipate and to comment on cultural trends and tendencies, the full significance of which emerge only after his novels are published" (i). The writer has, in fact, even been described as "the most perceptive (almost occult) chronicler of contemporary life" (Ferris). As for the themes he tackles in his works, DeLillo seems to be most interested in technology and media—"and indeed the *convergence* of media and technology, especially through the process of digitalization" (Herbrechter "Posthumanism" 11; emphasis in the original)—the role of language and names and, perhaps most notably, death, which is, according to Erik Cofer, "a classic DeLillo fascination" (1). The fear of death, and the desire to escape mortality, can be

considered to be, in fact, two of DeLillo's most recurrent themes. As Michiko Kakutani puts it:

> Death stalks Don DeLillo's characters—be it in the form of terrorism, the atomic bomb, assassination, suicide, war, earthquakes, murderous cults or "an airborne toxic event" passing over the landscape "like some death ship in a Norse legend." To try to stave off their fear of death, his people compulsively reach for belief systems, drugs, hobbies, organizing principles (from football to mathematical equations to stories), housekeeping rituals—anything that might hold the inevitable fact of mortality at bay.

Jack Gladney and his wife Babette in *White Noise* are, for example, two characters who suffer from an increased death-angst after the latter is exposed to a toxic substance called Nyodene D. In order to cope with her angst, Babette Gladney starts taking a new drug called Dylar, which is still at an experimental stage but promises to help those who take it cope with their fear of death. In this respect, Hava Tirosh-Samuelson points out that one of the main aims of transhumanism is, precisely, to develop technology—from chemical substances to neural implants—that allows human beings to exercise control over their own "desires, moods, and mental states" (19). The transhumanist belief that technology will someday allow us to experience "pleasant sensations all the time" is, according to Tirosh-Samuelson, misguided, as it ultimately ignores the value of feelings such as "insecurity, anxiety, and uncertainty," which are, nevertheless, an integral part of being human (39). DeLillo seems to share this opinion, as evidenced by the fact that, for the female protagonist of *White Noise*, the results are not as good as she expected. Not only does the drug not work for her but she also develops some side effects, such as the inability to differentiate between words and things. However, *White Noise* is just one of many works in which DeLillo portrays failed attempts on the part of the characters at overcoming their human limitations. In fact, as well-known author Joshua Ferris states in his review of *Zero K*: "In book after book, his characters . . . quest for truer or purer or more permanent identities, for the hidden key that will resolve them of their limitations, weaknesses and mortal bearings. More often than not, that quest leads to disillusionment and death."

In his latest novel, *Zero K* (2016), DeLillo takes up again the subject of death and portrays some characters whose ultimate desire is to transcend it. The ageing couple Ross Lockhart and Artis Martineau decide to have their bodies cryopreserved and stored in a secluded cryonics facility with the hope of being brought back to life in the future. In their

wish to transcend their own mortality, these two characters resemble other characters by DeLillo, especially the above-mentioned couple in *White Noise*. In this respect, Cofer affirms that:

> Reading very much like a spiritual successor to *White Noise*, *Zero K* features characters, such as Jeffrey's father Ross Lockhart and his wife Artis Martineau, who disavow death as life's logical, unavoidable denouement. As a couple, Ross and Artis practically function as an older, wealthier version of Jack and Babette, divesting their hopes and futures in an updated form of biotechnology superior to the pharmaceutical stopgap known as Dylar. (2)

DeLillo's interest in transhumanist ideas is, thus, not unique to *Zero K*. On the contrary, the possibility of overcoming human limitations through technology is a topic the writer had already addressed in *White Noise*. Nevertheless, there are fundamental differences between the two novels. In *White Noise*, Jack's incident with the toxic substance Nyodene D. and Babette's decision to take the experimental drug Dylar seems to be just a pretext for DeLillo to comment on different aspects of contemporary life, such as consumerism and the power of the media. However, in *Zero K* the writer directly engages with—and puts to the test—one of the most widely discussed subjects in transhumanist circles: the possibility of overcoming death and achieving immortality by means of cryonics.

Furthermore, *Zero K* is a novel of trauma, a subject that had also found expression in some of his previous novels, both formally and thematically. Thus, in his 1997 best-seller *Underworld*, DeLillo juxtaposes two different kinds of trauma: the protagonist Nick Shay's psychic trauma, which results from his unintentional killing of one of his friends, and the cultural trauma derived from the Cold War in the United States (Baelo-Allué 65). For its part, *The Body Artist* (2001) traces Lauren Hartke's mourning process after the suicide of her older husband Rey Robles and shows some of the formal features which tend to recur in trauma narratives. DeLillo's 2007 novel *Falling Man* is, in turn, a psychic trauma novel that follows the lives of Keith Neudecker and other survivors of the 9/11 terrorist attacks and that formally mirrors "the workings of traumatic memory in the victims' mind" (Baelo-Allué 69). As is the case with these three novels, *Zero K* shows many of the formal and thematic features which are typical of the narratives of trauma, such as a traumatized autodiegetic narrator, a minimalist style of narration, and constant chronological disruptions.

Set in the near future, *Zero K* offers an autodiegetic account of 34-year-old Jeffrey Lockhart's traumatizing journey to the Convergence, a secluded cryonics facility where his father's dying wife, Artis Martineau, awaits to have her body cryogenically suspended. After years of suffering from "several disabling illnesses," such as multiple sclerosis, Artis Martineau has decided to undergo cryopreservation. She hopes to be brought back to life in the future, when, as her husband Ross Lockhart explains, "there are ways to counteract the circumstances that led to the end" (DeLillo *Zero K* 8), that is, when there is technology available that can reverse the symptoms of her illness. In this respect, the Convergence appears to be, indeed, the place to be. Equipped with the latest technology and a team of researchers working on groundbreaking projects related to human reanimation, the Convergence seems to be a bridge into the future.

Artis has the support of her husband Ross from the very beginning. He does not seem bothered by the fact that his wife has given up the chance to spend her last days with her loved ones. On the contrary, he respects her choice and even tries to convince his skeptic son that she has made the right decision. "Don't be quick to draw conclusions about what you see and hear. This place was designed by serious people. Respect the idea. Respect the setting itself" (Don DeLillo *Zero K* 10), Ross asks his son upon his arrival to the Convergence. Nevertheless, from the very first moment Jeffrey sets foot on the cryonics facility, readers become aware of his skepticism towards the practices being carried out in there. Thus, Jeffrey describes the Convergence as "a barely believable place" and a "desert apparition," (14, 15), and he confesses having trouble processing what is happening around him: "[N]one of it was familiar, not the situation or the physical environment or the bearded man himself. I'd be on my way home before I'd be able to absorb any of it" (8), Jeffrey narrates.

It is precisely while trying to understand what is happening around him that Jeffrey starts to reenact some childhood traumas. On the one hand, he keeps recalling his mother's death, an episode that he remembers in a very particular way, as will be explained in the following sections. On the other hand, he has flashbacks to the moment when his father, a successful businessman who had made a fortune and a reputation "by analyzing the profit impact of natural disasters" (DeLillo *Zero K* 13-14), abandoned him and his mother. The protagonist's psychological fragmentation does nothing but worsen when he realizes that his father, with whom he has now a good relationship, could be considering the possibility of joining his wife Artis and undergoing immediate

cryopreservation too. At the prospect of being abandoned a second time, he starts to act out his childhood traumas with still more intensity. Although Ross finally backs down and both he and Jeffrey go back to New York, the damage has already been done. Two years later, just when a still traumatized Jeffrey tries to open up and put his trauma into words, Ross announces his decision to go back to the Convergence and undergo cryopreservation: he finds life without Artis unbearable. Therefore, Jeffrey's attempt to work through his trauma is frustrated. His father is abandoning him one more time and refusing to support him on his process of healing. Jeffrey remains, until the very end of the novel, traumatized, unable to come to terms with the past.

Overall, *Zero K* is a novel that brings together DeLillo's growing interest in theories of the post- and the transhuman and his long-standing preoccupation with the traumatic. The writer's choice to write a narrative of trauma in order to tackle the prescient issue of life extension is not without implications. When the novel is analyzed from the combined perspective of trauma studies and theories of the post- and the transhuman, we realize that different layers of trauma interweave in the novel, giving rise to a fragmented narrative that ultimately makes readers question the ethics of life extension technologies.

4.1.2. *Zero K*'s reception

Despite its recent release, *Zero K*'s thematic wealth, as well as its peculiar linguistic features, have already attracted the attention of a considerable number of critics and reviewers, who have approached the novel from different perspectives. Six academic articles (Schaberg, Maffey and Teo, Ashman, Cofer, Herbrechter, and Glavanakova) seem to be most salient and representative of the different approaches taken by academics when analyzing the novel. In his 2017 article "Ecological Disorientation in Airline Ads and in DeLillo's *Zero K*," Christopher Schaberg reflects on the concept of "ecological disorientation," which he describes as "a frantic sense of uncertainty concerning where we are—in time, in space—and what is worth trying to preserve, or, worse, what is only worth squandering, at accelerating swiftness" (91). According to Schaberg, this sense of uncertainty is present, whether in a more obvious or in a subtler way, in airline ads, as they tend to offer conflicting views on the role of humans as regards global responsibility and ecological balance. Thus, while the ads explored in the article visibly convey the airline's commitment to protecting the planet, they also place human beings in a

privileged position "in terms of knowing and in terms of the ability to control the course of things" (78) and tend to ignore and repress the ecological impact produced by human air travel. By way of conclusion, Schaberg considers DeLillo's novel to be "haunted by contemporary flight, and also haunted by ecological disorientation." According to this critic, whereas the airline adds analyzed in the article showed inconsistent understandings of the role of human beings in respect to ecological balance, DeLillo's reflections on air journeys suggest that "human flight is never a simple background matter" (76). By undermining the story's "more profound themes with the nitty-gritty of air travel," DeLillo suggests that "even as these self-important characters are seemingly focused on big, long-term issues, they are ignoring what is right in front of them—and what may be accelerating their (global) demise" (89). Although Schaberg's article may be too specific, his observation that some of the characters in *Zero K* travel by air to the Convergence to escape a "threatened planet" (91), a world that has become inhospitable—paradoxically enough, due to anthropogenic climate change—successfully exposes the contradictions human beings face in the age of the Anthropocene.

In their 2018 article "Changing Channels of Technology: Disaster and (Im)mortality in Don DeLillo's *White Noise*, *Cosmopolis* and *Zero K*," Ross Maffey and Yugin Teo examine the representation and the implications of technology in *White Noise* (1985), *Cosmopolis* (2003), and *Zero K* (2016). According to Maffey and Teo, technology permeates every aspect of each of these novels. Sometimes, it mediates the way in which the characters perceive disaster—in this respect, these critics claim that the technological repetition to which DeLillo's characters are subjected provokes not only their emotional detachment but also their desire and longing for disaster (6). Other times, characters appear to be so dependent on technology that they have trouble drawing a distinction between reality and virtuality—thus, for instance, the protagonist of *Cosmopolis* Eric Packer even forgets "how ordinary humanity looks and sounds" (7). At times, technology, rather than natural disasters, appears as the primary force that threatens to destroy contemporary society (8). In any case, these critics claim that DeLillo's novels point to the fact that human beings have progressively lost their privileged position in relation to technology, to the point that technology nowadays controls them. In their view, DeLillo argues that "[t]echnology now has the ability to control its users, and this suggests that it has a lifelike purpose we have no 'authority' over" (9). According to Maffey and Teo, DeLillo's novel *Zero K*—which can be regarded as the culmination of DeLillo's literary

project—appears to offer a way out of the "impending disaster that lies waiting within technology as the creators no longer have control over their creation" (10). Paradoxically, the solution the novel offers lies in using cryonics not to escape death—as one might expect—but to escape life itself. Thus, for these critics, the Convergence provides "a gateway" for people to escape a world that "is full of disaster and danger that perhaps an individual would rather miss than withstand" (18). What this article has in common with Schaberg's is that both regard *Zero K* as a novel that emphasizes the need to retreat from a planet that has become inhospitable for human beings. However, for Maffey and Teo, technology rather than anthropogenic climate change poses the biggest threat. In any case, because they both highlight the important role played by human beings in the demise of the planet, their contributions underline the pertinence of dealing with the Anthropocene when analyzing DeLillo's novel.

Taking a different approach, in his 2018 article "'Death Itself Shall Be Deathless': Transrationalism and Eternal Death in Don DeLillo's *Zero K*," Nathan Ashman points out that, as happens in many of his previous novels, in *Zero K* DeLillo overtly engages with "the status of human mortality in the face of rapid and overwhelming scientific and technological change" (2). However, according to Ashman, DeLillo's eighteenth novel "amplifies" the writer's examination of the death-technology compound "to new, uncharted proportions, violently disrupting binaries of living and dead, organic and artificial" (10). Thus, while many have conceived death as "the final frontier of the real" in an increasingly mediatized postmodern culture (3), DeLillo creates in *Zero K* "a new modality of death" (2) to warn against contemporary attempts at mediatizing and ultimately transcending it (3). More specifically, the writer presents cryopreservation as "a form of postponed, eternal death" (10), which is best illustrated by Artis's experience of consciousness once suspended in the cryonic pod, a scene which, according to Ashman, "actualizes the profound rupturing of temporal and spatial boundaries as a consequence of death's disruption as border" (8). Ashman argues that by sharing with his readers her "disorientating stream of disembodied sensations," which "forcefully communicates Artis's location between polarities of living and dead" (7), DeLillo ultimately incites readers to reflect on "the disorientating consequences of a world stripped of death as the final frontier of the real" (10).

Jeffrey Nealon's concept of post-postmodernism proves to be, in turn, relevant for the analysis of *Zero K* in Erik Cofer's 2018 article "Owning the End of the World: *Zero*

K and DeLillo's Post-Postmodern Mutation." According to Nealon, present-day society is in need of a literature that minimizes the nostalgia derived from the emptiness and lack of values associated to postmodernism—also known as "postmodern melancholia" (Eaton 34, qtd. in Cofer 2)—and becomes, instead, useful for post-postmodern living (4). For Cofer, *Zero K*—a novel to which he refers alternately as "DeLillo's anti-transhumanist deliberation" and "DeLillo's post-postmodern mutation" (2, 6)—satisfies this requirement. In an era in which human enhancement technologies threat negatively to alter the identity of human beings by promoting "segmented, disembodied form[s]," *Zero K* stands as a book that calls for a "networked, embodied existence." According to Cofer, it is precisely the section entitled "Artis Martineau" that "offers the most damning critique of transhumanism and postmodern melancholia" (2). As this critic points out, this section shows how, after her decision to undergo cryopreservation, Artis is induced into a state in which she apparently maintains "some vestige of consciousness." Thus, she "displays awareness, but no true identity" (9). According to Cofer, this "brief, decontextualized interval" (10)—which unearths disembodiment "of all its technogenic sexiness"—awakens readers to the dangers of exchanging "embodied time" for "more time in an unspecified form" and proves that embodiment and interaction with other human beings are "necessary for the formation and preservation of identity" (9). Thus, both Ashman and Cofer regard *Zero K* as a warning against the different ways in which life extension technologies threat to alter human identity. In this respect, both critics highlight the relevance of the section "Artis Martineau." This part of the novel criticizes the disembodiment and the dislocation to which Artis is subjected in the cryonic pod and, by extension, the disembodiment and dislocation to which human beings may be subjected in an increasingly mediatized and technological society. Instead, it stresses the need to go back to the real. Cofer's conclusion that embodiment and interaction with other human beings are key in the creation and preservation of identity, in particular, will prove to be particularly pertinent for my analysis of the novel.

Moving away from the (post-)postmodern paradigm, in his article "Posthumanism and the Posthuman in Don DeLillo's *Point Omega* and *Zero K*," Stefan Herbrechter claims that DeLillo belongs to "a generation of writers who, in their 'late post-2000 phase' more or less critically accompany the transition from late postmodernism to a new [posthumanist] experience of time" (4). Such experience arises as a result of socio-economic globalization and media-technological digitalization. According to

Herbrechter, DeLillo adopts in his later works the role of a "*critical* posthumanist, or a critical observer of the current redefinition of the human (and its limits)," and often provides readers with a "neohumanist counternarrative in the face of technology and terrorism" (5; emphasis in the original). Thus, while the slow rhythm of *Point Omega* intentionally draws the reader's attention to their own limitations "vis-à-vis the enormity of prehuman geological deep time and the posthuman acceleration of 'machinic speed'" in *Zero K* DeLillo "openly thematises the role of techno-utopianism and techno-dystopianism and displays a scepticism towards both" (9, 11). More specifically, DeLillo deals in *Zero K* with both "the fear *and* desire of becoming somehow *trans*human in the face of ambient extinction threats and species angst" (11; emphasis in the original). Then Herbrechter argues that while the renowned writer has "embraced and critically thematized 'the posthuman'" in his later novels, he has often done so by means of "providing counternarratives to some of its symptoms" (16). His neohumanist inclinations have sometimes led him to neglect the more positive aspects of posthumanism. Thus, borrowing some fragments from his 2013 review of Rosi Braidotti's *The Posthuman*, Herbrechter writes: "Located in the ambiguity between the 'yearning for human potentiality' and the 'frustration about human reality,' posthumanism's own critical potential ultimately is denied by DeLillo's own (*neo*humanist) desire to 'rehumanize, remember and reinvent'" ("Posthumanism" 16; emphasis in the original). Finally, quoting from *Zero K*, Herbrechter suggests that DeLillo's task as a writer in *Zero K* seems to be "'to subvert the dance of transcendence' (242) even while he might not be able to 'stifle [his] admiration' (257)" (17).

Another academic who has taken a posthumanist approach when analyzing the novel is Alexandra K. Glavanakova. In her 2017 article "The Age of Humans Meets Posthumanism: Reflections on Don DeLillo's *Zero K*," Glavanakova describes DeLillo's novel as "a somber and contemplative text" (92). In the book, the writer intertwines the realist mode of narration with the speculative one—as well as the themes of technology and death—to reflect on "the nature of the Anthropocene" and "what it means to be an American as well as what it means to be human and posthuman in the second decade of the twenty first century" (93). In this respect, Glavanakova claims that the "eco-apocalyptic scenarios and catastrophic realities" described in the novel coexist with a more "human-assertive vision" that acknowledges the privileged position of human beings in the hierarchy of life and, therefore, allows for finding "solutions to human

survival through science and technology" (95)—more specifically, through cryopreservation. However, according to this critic, by presenting readers with images of "broken and disintegrating mannequins," DeLillo also denounces the objectivization to which the human body is subjected in the technological era and invites us to be skeptical of "the new religion of technology" (103). Ultimately, in line with Herbrechter's contention, Glavanakova argues that DeLillo adopts a balanced perspective "on the interaction between science and religion," refusing to present "a utopian technocracy" but also refusing to subscribe to "the contemporary technophobic nightmares" that are often associated to science fiction cinema (105).

Therefore, *Zero K* has been approached from different but often complementary perspectives. Frequently, DeLillo's latest novel has been analyzed in relation to some of his earlier works, which proves that *Zero K* could well be a continuation—or even provide a closure—to his literary project. Thus, from the perspective of environmental criticism, *Zero K* has been read as a novel haunted by ecological disorientation (Schaberg). From a purely technological perspective, it has been read as a novel that offers a way out of the sense of impending disaster that predates contemporary society once human beings have lost their privileged position in relation to technology (Maffey and Teo). In the context of (post-)postmodernism, *Zero K* has been read both as a warning against contemporary attempts at mediatizing and transcending death in postmodern culture (Ashman) and as a novel that simultaneously criticizes transhumanism and transcends postmodern melancholia (Cofer). Finally, from a posthumanist perspective, it has been interpreted as a novel that deals with both the fear and the desire of becoming transhuman in the face of the possible extinction of the human species due to environmental catastrophes (Herbrechter) and that explores the shortcomings of placing our hopes of human survival in science and technology (Glavanakova).

As happened with *Generosity* and *The Circle*, *Zero K* has not only awakened the interest of academics but also captivated writers, reviewers, and the general public alike. In her review for *The New York Times*, Kakutani describes *Zero K* as DeLillo's "most persuasive [novel] since his astonishing 1997 masterpiece, 'Underworld.'" According to this influential reviewer, although the beginning of *Zero K* has "unfortunate echoes" of some of DeLillo's previous novels—in which the writer "exchanged his jazzy, tactile feel for contemporary life for strangely stylized, almost abstract musings on identity and fate"—the writer progressively (and successfully) becomes more concerned with

mapping "the incongruities and chimeras of modern life." Particularly, the novel explores the ways in which science and religion have clashed and converged in a world in which, fearing terrorism and war, human beings turn to technology for solutions—and even salvation. In this respect, the writer proves to be skeptical of the ideas put forward by "those who might regard human life as a step on an evolutionary ladder between the apes and a futuristic race of star children"—that is, cynical about the ideas put forward by contemporary transhumanist critics. Indeed, for Kakutani the novel seems to be a warning against the dangers of placing our hopes in technology in order to overcome mortality. As she puts it: "'Zero K' suggests that the hope that technology will supply a solution to the problem of mortality (as religion once did) is both delusional and a dangerous distraction from the here and now."

In a similar vein, in her review for the *European Journal of American Studies*, Rachele Dini acknowledges that *Zero K* "features passages of great eloquence, which vividly capture the idiosyncrasies of our new century," but also draws our attention to some of the novel's weaknesses, which, according to her, have to do mostly with diction and characterization. Thus, for Dini the dialogues between the protagonist and his father are "laboured," DeLillo too frequently uses "elongated sentences featuring a statement followed by its modifier"—which "makes for strained reading"—and the novel's characters seem to be "mouthpieces for philosophical epithets" rather than "semblances of real people" (3). While it is true that *Zero K* successfully traces the challenges human beings face in an increasingly technological society, Kakutani and Dini's critiques of the style used by DeLillo do not take into account the novel's engagement with trauma. As will be explained in the following sections, DeLillo's minimalist, sparse style formally reflects the narrator's troubled psychological condition and, therefore, enhances the reader's sense of emotional and psychological breakdown.

In fact, in opposition to Kakutani and Dini—who praise the pertinence and prescience of DeLillo's thematic engagement but censure some of his formal choices—some critics have a more positive overall impression of the novel. Ferris, for instance, refers to *Zero K* as "one of the most mysterious, emotionally moving and formally rewarding books of DeLillo's long career." For his part, Keith Watson claims *Zero K* to be a rich and deep novel "written with an ardent concentration and economy, no superfluous words, not even a wasted comma." Furthermore, according to Watson, DeLillo's prose in *Zero K* "buzzes with the ambient hum of modernity, attuning the reader

to a subliminal frequency, the hidden meanings of everyday objects and rituals." Overall, as will be argued in this chapter, much of the success of the novel lies, precisely, in the perfect symbiosis between DeLillo's thematic and stylistic choices.

4.1.3. *Zero K*: a balanced perspective on cryonics

Some of the issues discussed by the above-mentioned critics and reviewers in their analyses of *Zero K* seem to me particularly pertinent and well worth further study. Firstly, Herbrechter's contention that in *Zero K* DeLillo adopts the role of a critical posthumanist and conveys not only his reservations but also his admiration for the Convergence's technologies—even if he does seem to incline towards more pessimistic moral stances. Secondly, Kakutani's claim that DeLillo questions in *Zero K* the possibility of transcending mortality by means of life extension technologies, warning readers that it is unrealistic and that it could even prevent human beings from fully focusing on the present moment. Thirdly, Cofer's assertion that *Zero K* posits embodiment and interaction with other human beings as a counterbalance to the disembodiment fostered by the Convergence's life extension technologies. When these three arguments are put together, they seem to complement and reinforce each other. In fact, the idea that we get when we read the novel is that while DeLillo may be well aware of the possibilities opened up by life extension technologies, he also feels that they could somehow threaten or diminish our humanity by fostering disembodiment and preventing human beings from focusing on the present moment.

Because DeLillo does seem to engage with both the dangers and the possibilities opened up by the Convergence's life extension technologies, an analysis of the novel from the double perspective of transhumanism and critical posthumanism seems to be in order. Although the post- and the transhuman have frequently played a central role in the analyses of *Zero K*, further analysis from these two perspectives is required, since the possibilities opened up by the Convergence's technologies have only been mentioned in passing and critics have tended to ignore the novel's engagement with trauma—which, nevertheless, plays an integral role in the narrative. In this last respect, this dissertation argues that it becomes a powerful way of disclosing the disembodiment and dehumanization fostered by the Convergence's technologies—the section "Artis Martineau" may also prove to be key in this respect, as Ashman and Cofer argue.

In line with the previous chapters of this dissertation, this chapter first offers an analysis of the novel from the perspective of the optimistic transhumanist philosophy. The cryonics facility depicted in the novel, which may remind us of a transhumanist clandestine laboratory, has some particularities that make it the ideal place to realize the transhumanist dream of achieving immortality. First, it is strategically located right in the middle of the desert between Kyrgyzstan and Kazakhstan, an area not "susceptible to earthquakes or to minor swarms" which counts, additionally, with "untapped reserves of rare minerals and the rolling thunder of oil money" (DeLillo *Zero K* 129).[1] Secondly, the donations made by private donors have made it possible to construct a cutting-edge building in terms of safety and self-sufficiency. As Ross declares: "This is what we want, this separation. We have what is needed. Durable energy sources and strong mechanized systems. Blast walls and fortified floors. Structural redundancy. Fire safety. Security patrols, land and air. Elaborate cyberdefense. And so on" (30). Thirdly, the Convergence counts with an interdisciplinary team of specialists—there are "social theorists involved, and biologists, and futurists, and geneticists, and climatologists, and neuroscientists, and psychologists, and ethicists" (33)—working together, with unlimited funds, to try to solve the problem of death or, as Ross points out, "making the future. A new idea of the future" (30).

As happened with *Generosity* and *The Circle*, the Convergence's transhumanist ethos can be clearly perceived in the language used by some of the people who work there—and by its more faithful patients. Thus, in what seems to be a meeting of the Convergence's management board, one of the attendees anticipates that "[a]t some point in the future, death will become unacceptable even as the life of the planet becomes more fragile" (DeLillo *Zero K* 66). This claim reminds us of transhumanist philosopher,

[1] Paradoxically enough, Alcor Life Extension Foundation devotes one section of its website to explaining the reasons why Scottsdale, Arizona, was the chosen location for the construction of its headquarters. Thus, Scottsdale is in an area with "[v]ery low risk of natural disaster," which is not only crucial for the physical safety of the cryonics facility, but also "for the continued supply of liquid nitrogen, which must be produced at a complex industrial facility and delivered over a network of highways, both of which could be disrupted by a natural disaster." Furthermore, Alcor's building is close to the Phoenix Sky Harbor International Airport—which is "in the top ten US airports with the lowest number of annual flight delays" and "ranks number one in fewest the airport and runaway closure hours per year"—and "just a few hundred feet from the Scottsdale Airport," which means that patients can fly to Scottsdale "on private aircraft or charter flights" and "be inside Alcor's operating room minutes later." Other factors that make Scottsdale the perfect location are its low overall crime rate, which is "lower than the average for US cities," unemployment rates "below the national average," and the city being "a nice place to live, retire to, or visit" ("Why Scottsdale?").

politician, and entrepreneur Zoltan Istvan's assertion in a recent interview that, in the foreseeable future, "science and technology will soon change human mortality forever" and "people will have the choice whether to die or not" (qtd. in Souli).

On their part, the "Stenmark twins"—the name Jeffrey gives to the twins who work at the Convergence—anticipate that, when learning about the Convergence's project, people will be asking themselves questions such as:

> Once we master life extension and approach the possibility of becoming ever renewable, what happens to our energies, our aspirations? . . . Isn't death a blessing? Doesn't it define the value of our lives, minute to minute, year to year? . . . Isn't the sting of our eventual dying what makes us precious to the people in our lives? (DeLillo *Zero K* 69)[2]

However, the twins eventually reject these questions because, according to them, they miss the point of their endeavor. As they put it: "We want to stretch the boundaries of what it means to be human—stretch and then surpass. We want to do whatever we are capable of doing in order to alter human thought and bend the energies of civilization" (70-71). This self-improvement ethos can also be traced in Ross's invitation to Jeffrey to get beyond his own limitations—"'you have to get beyond your experience,' he said. 'Beyond your limitations'" (35)—and Ben Ezra's claim that "we're getting ahead of ourselves. This is where we want to be" (126). All the previous quotations echo the language of hope and improvement used by transhumanist philosophers in contemporary society and underline the pertinence of analyzing the novel from the perspective of transhumanist philosophy.

Nevertheless, as has been explained in previous chapters, transhumanism is an inherently optimistic movement that tends to disregard the potential hazards of human enhancement technologies. That is why an analysis of the novel from the more encompassing perspective of critical posthumanism could complement well the analysis from the perspective of transhumanism. This combined perspective aims at showing that, although DeLillo does tackle some of the possibilities opened up by the Convergence's life extension technologies, the writer also discloses and criticizes the disembodiment and the loss of identity fostered by these technologies—as already hinted at by Cofer and

[2] These questions remind us of Winnie Richards's meditations in *White Noise*: "I think it's a mistake to lose one's sense of death, even one's fear of death. Isn't death the boundary we need? Doesn't it give a precious texture to life, a sense of definition? You have to ask yourself whether anything you do in this life would have beauty and meaning without the knowledge you carry of a final line, a border or limit" (217).

Kakutani in their analyses of the novel. As the following pages will attempt to prove, ultimately the novel celebrates embodiment, the here and now, and human relationships.

The first section of the chapter traces, therefore, the enhancement possibilities offered by the Convergence's life extension technologies, analyzing similarities and differences between these technologies and the technologies that are already being used by existing cryonics companies such as Alcor Life Extension Foundation (Alcor from here on) and KrioRus. This section also presents some of the most common arguments both in favor and against the use of these technologies put forward by different critics over the last decades. The second section of the chapter pays attention to the narrative strategies used by DeLillo to convey both the possibilities and the dangers of life extension technologies. Thus, this section argues that DeLillo leads readers to recognize the possibilities opened up by the Convergence's technologies by means of introducing a screen in which images of man-induced natural disasters are projected, as well as by introducing the voices of some techno-utopian characters, and presenting readers with Jeffrey and Ross's musings on the positive aspects of the Convergence's technologies. Nevertheless, this section also argues that, while constructing a narrative of trauma, DeLillo denounces the disembodiment and dehumanization these technologies bring with them and encourages us instead to celebrate the present moment and build strong relationships with those around us.

4.2. *ZERO K* AND TRANSHUMANISM

4.2.1. The Convergence's life extension technologies

The possibility of reversing aging and, ultimately, overcoming death are two of the most widely discussed subjects in transhumanist circles. Transhumanist philosopher and politician Zoltan Istvan even describes death as "the first major challenge for the species to overcome to truly transcend our biology" (qtd. in Souli). Although slowing down the aging process still remains a long way off, Nick Bostrom keeps his hope and believes that someday anti-aging medicine will become a real possibility. Meanwhile, he argues, "cryonic suspension should be made available as an option for those who desire it," as future technologies will perhaps make it possible to bring these people back to life, and cryonics, in any case, "carries better odds than cremation or burial" ("Transhumanist" 10). Companies such as Alcor, in the USA, or KrioRus, in Russia, already offer customers

the possibility of having their bodies cryopreserved for slightly less than forty thousand dollars—albeit with no guarantees.[3] According to Glavanakova, the cryonic procedures described in the novel are not that different from the ones available in contemporary society. In her own words: "In accordance with the speculative realism of the novel, DeLillo's visualization concerning cryonic experiments, though seemingly futuristic, is not actually far removed from present-day reality" (96). This section traces the similarities and the points of divergence between the cryonics facilities depicted in *Zero K* and the above-mentioned cryonics companies, paying special attention to the conditions that need to be met before the cryopreservation procedures can begin, as well as to the particularities of each of the stages of the cryopreservation process.

To begin with, in the "Frequently Asked Questions" section of Alcor's website, the foundation states that "cryonics procedures should ideally begin within the first one or two minutes after the heart stops, and preferably within 15 minutes." Furthermore, the foundation makes it clear that, under current North-American law, cryopreserving a body that is not legally dead is "a crime regardless of what that person's wishes may be." Thus, in order to start the procedures, Alcor must "wait for an independent authority to declare that illness or injury has caused the heart to stop, that further medical care is not appropriate, and that therefore legal death has occurred." Those same requirements are placed on KrioRus' patients. By contrast, being located in the middle of the desert—a place with a "harsh geography, beyond the limits of believability and law" (DeLillo *Zero K* 254)—the Convergence offers its patients more freedom of choice in this matter. The Stenmark twins are two characters who call our attention to the Convergence's lack of constraints in this respect, which derives in part from its strategic location: "We have remade this wasteland, this secluded desert shit-hole, in order to separate ourselves from reasonableness, from this burden of what is called responsible thinking" (71).[4]

Thus, the cryonics facility described by DeLillo counts with a special unit for patients who willingly decide to undergo premature cryopreservation, the "Zero K" unit

[3] Although this chapter focuses mainly on the particularities of Alcor (the largest cryonics organization in America) and KrioRus (its European counterpart), other companies such as The Cryonics Institute or Oregon Cryonics in the United States also offer similar services.

[4] Similarly, upon realizing that his ideas are not being accepted in the USA, Jethro Knights, the protagonist of Zoltan Istvan's techno-utopian and pseudo-autobiographical novel *The Transhumanist Wager* (2013), decides to build from scratch a whole new country, which he calls Transhumania. Being located in the middle of the ocean, Transhumania is free from any legal constraints.

(DeLillo *Zero K* 112). These people are referred to as "the heralds" (238) in the story and the unit that gives the novel its name is, according to Ross, precisely predicated on their "willingness to make a certain kind of transition to the next level" (112). It is worth mentioning, however, that when Jeffrey and Ross are taken on a guided tour of the body pods at the Zero K unit, the guide announces, to Jeffrey's surprise, that temperature does not approach the temperature "called absolute zero" (142)—which stands for -273.15 degrees Celsius, or -459,67 degrees Fahrenheit. Hence, Jeffrey ironically remarks that "the term, then, was pure drama, another stray trace of the Stenmark twins" (143).

In spite of this fundamental difference, there are also some resemblances between Alcor and KrioRus' cryopreservation procedures and those of the Convergence. The first similarity has to do with *what* is preserved and *how* it is stored for future reanimation. The two leading cryonics companies (Alcor and KrioRus) offer their patients the possibility of choosing whether they want to have their whole bodies cryopreserved or just their brains. The prices range from $200,000 for whole-body preservation to $80,000 for neuropreservation, in the case of Alcor, and from $36,000 for whole-body preservation to $12,000 for neuropreservation, in the case of KrioRus. As KrioRus declares in its website, the difference in price is because "for whole body preservation and storage, perfusion and storage become more complicated and costly." About half of KrioRus' patients choose, nevertheless, whole body preservation. Such an option seems, according to the cryonics company, better suited to "the more conventionally minded," that is, to those who regard brain or head preservation as "all the more macabre," or those who "consider more likely the repair of cryopreserved tissue, of the entire body, than whatever mode of complete bodily replacement." Conversely, for those who are "aware of new technologies and technological and scientific projections," neuropreservation seems to be, according to the cryonics company, the most suitable option. These individuals either "appreciate that the human personality—according to the modern scientific view—resides in the brain" or "expect that in the future a new body, complete with working organs, limbs and everything else, can be grown from stem cells of fabricated artificially for the revival of cryopatients" ("Human Cryopreservation").

Regarding neuropreservation, Alcor goes one step further and reveals in its website that, as the brain "cannot be removed from the skull without injury," it needs to be "left within the skull during preservation and storage." Therefore, for those patients who just want to preserve their brain, "cephalic isolation (or 'neuroseparation') is

performed by surgical transection at the sixth cervical vertebrae" ("Frequently Asked Questions"). Similarly, the Convergence's patients also seem to be offered this choice. On the one hand, they might choose to have both their body and brain cryopreserved—even if the two are later stored in separate pods. In this case, the patients' bodies are "stripped of their essential organs" and stored "naked, . . . shaved heads" in body pods, while the organs are stored "in insulated vessels called organ pods" (DeLillo *Zero K* 140). On the other hand, patients may choose to have their entire heads, "with brains intact, . . . removed from the bodies and stored separately" (147). It goes without saying that, as happens in real life, only the wealthy have this choice in the story, as the fees at the Convergence seem to be deliberately high. In this respect, the Stenmark twins even remark that "[l]ife everlasting belongs to those of breathtaking wealth" (76).

Another similarity between the Convergence and the two leading cryonics companies has to do with the way they intend to bring their patients back to life. As for the Convergence's whole-body patients, the Stenmark twins claim that their bodies will be colonized with nanobots, embryonic stem cells, enzymes, proteins or nucleotides, which will "refresh their organs, regenerate their systems" (DeLillo *Zero K* 71). As for the Convergence's neuropatients, readers learn that someday in the near future their head will be attached "to a healthy nanobody" (147). In a similar vein, Alcor and KrioRus state in their websites that whole-body patients will be stored until the day in which cutting-edge technologies—nanotechnology, in particular—will allow scientists to repair their cells and tissues ("About Cryonics"; "Frequently Asked Questions"). The mid-to-late twenty-first century will be, according to scientists, key in this respect, as it "will bring an explosion of amazing capabilities for analyzing and repairing injured cells and tissues, similar to the information processing revolution that is now occurring" ("Frequently Asked Questions"). As for neuropatients, KrioRus states that "it will be necessary to restore the patient's body one way or another, perhaps by growing a healthy new body from the patient's own DNA" ("About Cryonics").

One obvious point of divergence between the two leading cryonics companies and their fictional counterpart has to do with what is supposed to happen in the interval between the patients' freezing and their reanimation, a period known by cryonicists as "stasis" (Weaver). During Ross and Jeffrey's second trip to the Convergence and, just moments before Ross is taken to the cryonic chamber, father and son are led, together with other heralds, to a room where one of the workers of the Convergence intends to

prepare them for what is coming next. What the "tall somber woman" (DeLillo *Zero K* 236)—this is the way Jeffrey describes her—suggests is that the patients will not completely lose their awareness once they are laid in the pods. On the contrary, they will present some signs of consciousness. In her own words:

> It will not be total darkness and utter silence. You know this. You've been instructed. First you will undergo the biomedical redaction, only a few hours from now. The brain-edit. In time you will re-encounter yourself. Memory, identity, self, on another level. . . . You will have a phantom life within the braincase. Floating thought. A passive sort of mental grasp. Ping ping ping. Like a newborn machine. (238)

Further evidence of brain activity during the stasis stage is provided in the middle section of the book, the section entitled "Artis Martineau," in which, as stated above, we realize that Artis maintains some vestige of consciousness—even if she does not display a true identity (Cofer 9). As hinted at above, Ashman refers to the passages in this section as "a disorientating stream of disembodied sensations that forcefully communicates Artis's location between polarities of living and dead," and points out that, rather than having escaped death, Artis seems to have entered "some boundless third space of incomprehension and anguish; an 'eternal death'" (7-8). Needless to say, this is only conceivable in DeLillo's fictional scenario.

4.2.2. Recapitulating the debate over life extension technologies

The possibility of extending the human lifespan—to a greater or lesser extent—is, as has been mentioned in previous sections, a main issue in the transhumanist agenda. Although there seems to be consensus that efforts should be made to "extend people's active health-spans" (Bostrom "Transhumanist" 13), some transhumanist critics go one step further and stress the desirability of achieving immortality in any possible way. Thus, in an interview with journalist Mark O'Connell, Natasha Vita-More has expressed her discontent with human mortality. She has claimed to have "no regard for death," and to be "impatient with it, annoyed." According to Vita-More, if human beings are a "neurotic" species, it is precisely because death is "always breathing down our necks" (qtd. in O'Connell 40). In "The Fable of the Dragon-Tyrant," Bostrom symbolically portrays death as a dragon-tyrant that eats thousands of people every day. Ultimately, he reaches the conclusion that, in the same way as "there are obvious and compelling moral reasons for the people in the

fable to get rid of the dragon," human beings in contemporary society "have compelling moral reasons to get rid of human senescence" (277). For his part, British biomedical gerontologist Aubrey de Grey has described ageing as a "deadly pandemic disease" (*Ending* 78) and has stressed the need to "develop ways to turn back the clock of ageing" ("Aubrey"). By contrast, other critics have criticized the transhumanist aim to defeat death. Tirosh-Samuelson, for instance, has made the following claim: "Instead of the transhumanist fixation on either postponing death or transcending death, I think it is more appropriate for humans to accept the reality of death as part of the very fabric of human life and to dignify how we live, how we age, and how we die" (46). For his part, Jesuit philosopher and scholar Joel Thompson has expressed his discontent with the transhumanist idea of transcending death and has instead described mortality as "an opportunity to grow in the virtues of faith, hope, empathy, mercy and love" (14).

Although several ways of reaching immortality have been proposed in transhumanist circles—many are those who place their bets on mind uploading, for example[5]—cryonics still remains central to the discussion on radical life extension. As Courtney Weaver points out, cryonics first entered the public imagination in the 1960s, after the publication of Robert Ettinger's *The Prospect of Immortality*. The North-American Professor of physics and mathematics expressed in this work his conviction that if a human being was frozen at the exact moment of death, he or she could eventually be brought back to life at some point in the near future. As Weaver explains, after the publication of Ettinger's work, cryonics societies sprung up in California and Michigan, the first person to undergo cryopreservation being University of California psychology Professor James Bedford, whose body was cryopreserved in 1967. Since then, cryonics has been the subject of intense debate, both inside and outside academia. Debates on

[5] The first critic to talk about mind uploading was the Canadian computer scientist Hans Moravec. As early as 1988, in his book *Mind Children: The Future of Robot and Human Intelligence*, Moravec already explored the possibility of downloading human consciousness onto computer hardware and envisioned "a postbiological world dominated by self-improving, thinking machines" (5). Following Moravec, other transhumanist critics have more recently called our attention to the possibilities that mind uploading offers for realizing immortality. Thus, in his 2005 work *The Singularity is Near: When Humans Transcend Biology*, Ray Kurzweil argues that, by the end of the 2030s, human beings will be able to have their intelligence, personality, and skills transferred to nonbiological software (198-201). This will allow them, in turn, to have control over how long they want their lives and thoughts to last (330). In his contribution to *The Transhumanist Reader*, technology expert and writer Giulio Prisco describes mind uploading as "the ultimate technology for immortality." He claims to be "persuaded that the ultimate realization of the dream of achieving an indefinite lifespan, with vastly enhanced cognitive abilities, lies in leaving biology behind and moving to a new, post-biological, cybernetic phase of our evolution" (235).

cryonics have followed, broadly speaking, two different paths. On the one hand, some critics have explored in their works the probability that cryonics will work. These critics have often focused on the technical aspects of the cryopreservation process. On the other hand, other critics have engaged with the ethical and philosophical issues that surround the idea of cryonics. Some of these critics have defended the pertinence of cryonics, while others have underlined its lack of ethical constraints.

Among those critics who have set out to demonstrate the feasibility of cryonics, Ettinger clearly stands out. As early as in 1962, Ettinger—who founded the Cryonics Institute in 1976 and is now considered to be the 'father of cryonics'—opened his work *The Prospect of Immortality* with the following sentence: "Most of us now living have a chance for personal, physical immortality." Thus, as well as dealing with some ethical questions related to cryonics, in his seminal work Ettinger engaged with some of the technical aspects of the process. He expressed his confidence that medical science would one day make it possible to repair "almost any damage to the human body, including freezing damage and senile debility or other cause of death" and concluded that the chances that cryonics would someday work were "excitingly favorable" (11).

Following Ettinger, Ralph C. Merkle—a computer scientist and nanotechnology theorist who has been a member of Alcor's management board since 1998—set out to demonstrate the likability of cryonics. In his 1994 article "The Molecular Repair of the Brain, Part II," Merkle suggested that all the literature produced on cryonics until that moment pointed to the fact that cryonics had many chances of working (30). Additionally, he expressed his confidence that "future unanticipated advances" in science and technology would result "in cheaper, simpler or more reliable methods" (18). In another article published on his personal website, Merkle further elaborated on this idea and suggested that: "[D]iscounting dystopian futures, assuming at least a reasonable quality of cryopreservation, and assuming that MNT [Molecular Nanotechnology] is developed more or less as expected, the probability of success seems quite high—likely exceeding 85%" ("Will"). More recently, in his article "The Ethics of Exponential Brain Extension through Brain Preservation" (2016), Michael A. Cerullo—a practicing psychiatrist and neurologist and a fellow of the Brain Preservation Foundation—has declared that "it is extremely likely that within only a few years [reversible] whole brain preservation with strong scientific support in favor of connectome preservation will be available for large mammalian brains" (99), thus opening a window of hope in transhumanist circles.

On the other side of the spectrum, some critics have expressed their reservations about the viability of cryonics. Editor of the *Skeptic* magazine Michael Shermer warns in his 2001 column for the *Scientific American* of the irreversible damages that cryopreservation may cause on the brain, something that he explains in easily understandable terms: "To see the flaw in this system, thaw out a can of frozen strawberries. During freezing, the water within each cell expands, crystallizes, and ruptures the cell membranes. When defrosted, all the intracellular goo oozes out, turning your strawberries into runny mush. This is your brain on cryonics" (29). For his part, neuroscientist Michael Hendricks claims in his 2015 article for the *MIT Technology Review* that "any suggestion that you can come back to life is simply snake oil." According to him, "reanimation or simulation is an abjectly false hope that is beyond the promise of technology and is certainly impossible with the frozen, dead tissue offered by the 'cryonics' industry." That is why Hendricks concludes his article by saying that "those who profit from this hope deserve our anger and contempt."

The ethical and philosophical implications of cryonics have also aroused the interest of several critics. In *The Prospect of Immortality*, Ettinger already anticipated some of the criticism that cryonics could trigger. Ettinger paid special attention to the religious argument that "freezing is 'unnatural' and that it was not 'intended' for cadavers to be revived" (79). However, he ultimately dismissed this argument and focused on explaining the reasons why religion and cryonics may not ultimately be incompatible. More recently, bioethicist Francesca Minerva has also recapitulated some of the most common arguments against cryonics in her work *The Ethics of Cryonics* (2018). On the one hand, Minerva discusses the claim that cryonics could be a waste of both "valuable organs," which would be frozen instead of being used to save the lives of other people, and "significant amounts of money," which could be donated instead to a charity and be used to save several lives (24). On the other hand, she explores the possibility of future generations being uninterested in bringing the cryopreserved back to life, be it for a lack of resources (35), be it for the discovery of new ways of extending the human lifespan (36), or for the impossibility of the cryopreserved to adapt to new (posthuman) ways of living (37-41).[6] Nevertheless, Minerva provides counterarguments to these objections and

[6] The fear of being brought back to life in a completely altered world is a theme also tackled by DeLillo in *Zero K*. Thus, at some point, one of the Stenmark twins wonders what the experience of being brought back to the world would be like: "When the time comes, we'll return. Who will we be, what will we find? The

concludes her book with the claim that even if we cannot really predict “the outcome of cryonics-related projects,” there are many reasons to think that they are “worth a shot” (130).

For his part, Shermer compares cryonics to religion, affirming that, as happens with religion, cryonics “promises everything, delivers nothing (but hope) and is based almost entirely on faith in the future.” Then Shermer claims to share the preoccupations expressed by Matthew Arnold in his 1852 poem “From the Hymn of Empedocles.” In particular, the fear that by dreaming of a “doubtful future date,” human beings may “lose all our present state, / And relegate to worlds yet distant our repose” (Arnold lines 8-11, qtd. in Shermer 29). That is, the fear that by placing all our hopes in the capacity of cryonics to grant us the opportunity to live again in the future, we may forget to enjoy the here and now. In *Zero K*, DeLillo seems to be well aware of all the present debates that surround the enterprise of cryonics. However, rather than leaning towards one side of the debate, the writer seems to adopt neither a completely techno-utopian nor a completely techno-dystopian moral stance (Herbrechter “Posthumanism” 11). The following section approaches the novel from the perspective of critical posthumanism, paying attention to the narrative strategies used by DeLillo to convey not only the possibilities opened up by the Convergence’s life extension technologies but also their most nefarious implications for human beings.

4.3. ZERO K FROM THE PERSPECTIVE OF CRITICAL POSTHUMANISM

4.3.1. The Convergence’s reasonable enterprise

In *Zero K*, DeLillo introduces some narrative strategies that may lead readers to believe that, in the pre-apocalyptic scenario depicted in the novel, undergoing cryonics could be indeed an appropriate choice. Thus, cryonics is portrayed in the novel as a way to escape the threatening conditions that haunt human beings in the age of the Anthropocene, a new geological epoch described by Braidotti as “the historical moment when the Human has become a geological force capable of affecting all life on this planet” (*Posthuman* 5). In *Zero K*’s fictional scenario, natural disasters, technology, and terrorism threaten the

---

world itself, decades away, think of it, or sooner, or later. Not so easy to imagine what will be out there, better or worse or so completely altered we will be too astonished to judge” (75).

inhabitants of the planet—a description that many readers may find realistically accurate. The people who work at the Convergence invest great efforts in making its patients and visitors realize that human beings have turned the Earth into an increasingly inhospitable place and convincing them that the only solution is to place their hopes in the future. To this purpose, the secluded cryonics facility counts with a screen which stretches "wall to wall" and reaches "nearly to the floor" (DeLillo *Zero K* 11), and in which images of less than desirable situations are projected. Readers have access to these images by means of Jeffrey, the autodiegetic narrator, who watches, describes, and comments on the images.

Most of the time, the screen shows images of natural disasters derived, one can infer, from anthropogenic climate change. Thus, as soon as Jeffrey arrives to the Convergence, the screen lowers and images of what seems to be a typhoon are projected. As he describes: "At first the images were all water. There was water racing through woodlands and surging over riverbanks. There were scenes of rain beating on terraced fields. . . . temples flooded, homes pitching down hillsides." In the midst of disaster, Jeffrey chronicles, "people everywhere running, others helpless in small boats bouncing over rapids" (DeLillo *Zero K* 11). This is not the first time Jeffrey witnesses something like this. On the contrary, the idea that readers get is that he is used to watching this kind of images on TV. As he puts it: "The size of the screen lifted the effect out of the category of TV news. Everything loomed, scenes lasted long past *the usual* broadcast breath" (11; my emphasis). The hyperrealism of the images projected on the screen, nevertheless, greatly distresses Jeff. However, it is, at the same time, what keeps him hooked, unable to take his eyes off the screen: "It was there in front of me, on my level, immediate and real, . . . A man, a face, underwater, staring out at me. I had to step back but also had to keep looking. It was hard not to look." At the sight of those images, Jeffrey seems to be "struck by oscillating sensations of repulsion and attraction" (Ashman 6).

At some later point, Jeffrey stands before the screen and watches images of the destruction caused by a tornado: "Nothing but sky at first, then an intimation of threat, treetops leaning, unnatural light. Soon, in seconds, a rotating column of wind, dirt and debris. . . . This was flat land, unobstructed, the screen all tornado now" (DeLillo *Zero K* 35-36). Once again, Jeffrey is all too familiar with the images and even anticipates what is coming next: "I'd seen many tornadoes on TV news reports and waited for the footage of the rubbled storm path, the aftermath, houses in a shattered line, roofs blown off, siding in collapse." Again, in spite of being used to watching images of destruction, the

Convergence makes the images seem so real that Jeffrey still finds them hard to watch: "people coming this way, in slow motion, nearly out of the screen and into the hall, carrying what they'd salvaged . . . and the dead arrayed on ravaged floorboards in front yards. The camera lingered on the bodies. The detail-work of their violent end was hard to watch" (36).

During the time he spends at the Convergence, Jeffrey has the chance to witness all kinds of natural disasters onscreen. They go from "homes imploded by heat and flame and lawn ornaments shriveled to a crisp" (DeLillo *Zero K* 120) to "ocean waves approaching and then water surging over seawalls" and "towers shaking, a bridge collapsing, a tremendous close-up view of ash and lava blasting out of an opening in the earth's crust." The hyperrealism of the images—they sometimes even "appear to spring into the camera and out toward the hallway" (121)[7]—does nothing but increase the sense of impending disaster. All Jeffrey can do is to watch silently "our climate enfolding us" (36). Because thanks to the use of the autodiegetic narrator we identify with the protagonist, we share his uneasiness at the sight of the images on the screens and we are led ultimately to think that the Convergence may be the right place to hide from an inevitable anthropogenic apocalypse. Some critics have offered a similar interpretation of the use of this narrative device. According to Watson, for the Convergence's patients, the images displayed on the screens function indeed as "reminders of the human horror they're escaping." For his part, Alex Preston argues that the screens seek to convince the Convergence's heralds "of the need to retreat from the Earth." Similarly, Schaberg claims that they work "to reassure inhabitants that it is time to opt for being frozen for a while" (87).

DeLillo also introduces some characters who play the role of spokesmen or spokeswomen of the Convergence's ideals. These characters awaken the Convergence's

[7] At some point during Jeffrey's first journey to the Convergence, once Ross has informed him of his decision to join Artis, Jeffrey recounts how the images on the screens eventually transcend the digital medium and become real. "People running, crowds of running men and women, they're closely packed and showing desperation, dozens, then hundreds, workpants, T-shirts, sweatshirts, . . . then they came wheeling around the corner charging in my direction, the running men and women, images bodied out, spilled from the screen. . . . I could see their sweat and smell their stink and they kept on coming, all looking directly ahead. Be calm. See what's here. Think about it clearly" (DeLillo *Zero K* 153). Although this episode has been interpreted as a "performance piece" choreographed by the Stenmark twins, "the designers of the Convergence" (Ashman 7), it could also be interpreted as a manifestation of Jeffrey's troubled psychological condition. Hallucinations are, indeed, one of the most frequent symptoms among trauma victims.

visitors—and, by extension, readers—to the dangers that contemporary technology and war already present for human beings, stressing in turn the reasonableness of escaping the present world by means of cryonics. Frequently, their voices are introduced in the form of monologues or speeches they deliver inside the cryonics facility and to which the narrator has access in some way or another. Key in this respect is the passage when Ross and Jeffrey, during their second and final trip to the Convergence, are taken to a room where a woman who works for the Convergence tries to reassure Ross and four other heralds of the appropriateness of their choice. Taking a pessimistic stance, the woman—who Jeffrey decides to call Zara—highlights the unlikelihood of the earth remaining a self-sufficient environment. In her own words: "If our planet remains a self-sustaining environment, how nice for everyone and how bloody unlikely" (DeLillo *Zero K* 238). According to her, Jeffrey narrates, the earth is experiencing a process of progressive annihilation in which technology plays a major role: "'That world, the one above,' she said, 'is being lost to the systems. To the transparent networks that slowly occlude the flow of all those aspects of nature and character that distinguish humans from elevator buttons and doorbells.'" Thus, Zara calls their attention to the "loss of autonomy," the "sense of being virtualized," the disembodiment, and the surveillance to which human beings are subjected in a technologically driven world (239).[8]

At this point, one of the Stenmark twins enters the room and interrupts Zara's speech. From Jeffrey's perspective, readers have access to his idea that in contemporary society, there are things other than technology that also threaten human beings. More specifically, "[t]error and war, everywhere now, sweeping the surface of our planet." Then he lists some of the menaces that human beings face on a daily basis, most of them the result of religious fanaticism and political extremism. From "websites that transmit atavistic horrors" and "car bombings at sacred sites" to men "tearing down the bronze statue of the former national hero" (DeLillo *Zero K* 241). These examples are all too familiar to us and confirm the speaker's idea that, even if "apocalypse is inherent in the structure of time and long-range climate and cosmic upheaval," human beings are now certainly witnessing "the signs of a self-willed inferno" (243). Thus, *Zero K*'s fictional

[8] It is ironic that a Convergence insider warns of the virtualization, disembodiment, and surveillance to which human beings are subjected in the society depicted in the novel, a society not unlike the one that Eggers's *The Circle* describes. Since the novel also makes readers aware of the constant surveillance to which visitors of the Convergence are subjected, as well as of the above-mentioned virtualization and disembodiment inherent in the idea of leaving this world behind to be suspended in a cryonic pod, we may ultimately regard with skepticism Zara's arguments in favor of cryonics.

world, as the people who work at the Convergence present it, perfectly fits the definition of a classical dystopia.

When the Stenmark twin is finished talking, he leaves the room. Zara resumes her speech and concludes that, in the face of the powerless situation in which human beings see themselves as regards technology, the Convergence appears as the only safe place to hide. Paradoxically enough, the solution the Convergence offers lies in using technology—more specifically, life extension technologies—to escape technology out of control:

> Technology has become a force of nature. We can't control it. It comes blowing over the planet and there's nowhere for us to hide. Except right here, of course, in this dynamic enclave, where we breathe safe air and live outside the range of the combative instincts, the blood desperation so recently detailed for us, on so many levels. (DeLillo *Zero K* 245)

In fact, earlier in the story, during his first trip to the Convergence, Jeffrey has the chance to witness a meeting between two of the Convergence's leaders and nine of its benefactors. Through a viewing slot in the wall that an escort activates for him, Jeffrey is able to follow the discussion, which he assumes, is being recorded, "sound and image," and is "intended primarily for the archives" (65). At some point during the meeting, one of the "vital minds" of the organization points out that the Convergence's aim is precisely "to design a response to whatever eventual calamity may strike the planet" (64, 66). Then, the same character expresses his belief that cryopreserved patients will wake up in a better world, a world "that will speak to us in a very different way" (67), possibly referring to a world free from natural catastrophes, technological threats, terrorism or war. Overall, in the face of the devastation to which the inhabitants of the planet are subjected, the solution the Convergence offers registers as utopic among the people who work there.

As well as offering human beings the possibility of escaping the menacing threats that haunt them in the age of the Anthropocene, the Convergence's technologies promise to help human beings escape premature illness and death. Throughout the story, Jeffrey seems to be skeptical of cryonics, although there are some moments when he seems to recognize the possibilities it offers for those who suffer from a disabling illness. Perhaps this can be most clearly perceived in his encounter with a young boy in a wheelchair. Jeffrey first meets the boy during his first trip to the Convergence, when he is strolling along the corridors trying to understand what is happening around him. Jeffrey describes the awkward positioning of the boy's upper body, "tilted severely to one side," but also

remarks that "his eyes were alert" (DeLillo *Zero K* 24). In a second encounter with the boy, which takes place in the hospice—the place where the Convergence's patients await to be cryopreserved—Jeffrey immediately recognizes him. The boy is "seated in a carrel, shiny and very still, positioned almost sculpturelike, contrapposto, head and shoulders twisted one way, hips and legs the other." Jeffrey asks him his age and place of birth, only to realize that the boy is barely able to utter "a series of indistinct sounds that were not mumbled or stuttered but only, somehow, broken" (94): the boy suffers from some kind of cerebral palsy. At that point, Jeffrey cannot avoid wondering how much time the young boy has left and thinking about the new technologies which could eventually cure his illness and give him a second chance in life:

> In his physical impairment, the nonalignment of upper and lower body, in this awful twistedness I found myself thinking of the new technologies that would one day be applied to his body and brain, allowing him to return to the world as a runner, a jumper, a public speaker. How could I fail to consider the idea, even in my deep skepticism? (94)[9]

Because thanks to the autodiegetic narration readers may identify with Jeffrey, we may also ponder whether technology could provide the boy with a better future. The possibility of using technology to improve the lives of disabled citizens has been widely discussed in transhumanist circles. In this respect, James Hughes, who as hinted at in previous chapters is also one of the most fervent advocates of democratic transhumanism, has claimed that, in the near future, "unlimited technological control over the human body and mind will be possible" (11). According to this critic, this will undoubtedly benefit the sick and disabled, as there is general agreement on the fact that "they should be able to use technology to more fully control their own lives" (12). Going one step further, Hughes argues that doing what we can to help disabled citizens "achieve a fuller possession of their faculties for reason, autonomy and communication" is our "ethical and political responsibility" (223). Hughes's argument that technology could improve the quality of life of some particular sectors of the population brings to light the more democratic and well-meaning side of transhumanism.

Lastly, the novel also conveys the idea that cryonics could be a way of eternally enjoying the company of our loved ones—even if this idea is eventually problematized

[9] This scene takes us back to *The Circle*, to the moment when Eamon Bailey makes a case for transparency by arguing that disabled people, such as his son, who is on a wheelchair, only have access to certain places by means of the pictures and videos that other people take and upload to social networks.

by the fact that Jeffrey refuses to undergo cryopreservation, so Ross will never see his son again in the future. The love story between Ross Lockhart and Artis Martineau is key in this respect. Artis, who suffers from multiple sclerosis, decides to undergo cryopreservation with the hope of being brought back to life in the future. Her husband Ross, who is in his mid-to-late sixties but perfectly healthy, tries, to no avail, to live without her, and eventually decides to be cryopreserved next to her. Even if readers tend to share Jeffrey's cynical perspective, we also have access to the dialogues in which father and son debate the appropriateness of Ross' decision. Thus, we may eventually understand his motivations and realize that it would be indeed a good thing if technology gave us the chance to be forever with the people we love.

To sum up, by introducing a screen in which images of man-induced natural disasters are projected, as well as the voices of some techno-utopian characters, and presenting Jeffrey and Ross's musings on the positive aspects of the Convergence's technologies, readers may become aware of some of the possibilities opened up by the Convergence's life extension technologies. In particular, we may realize that cryonics could be a way to escape man-made natural disasters, technological and terrorist threats, and premature illness and death, as well as a way of eternally enjoying the company of our loved ones—as long as the procedure is taken in a joint manner and the technology necessary to reanimate the cryopreserved is eventually developed.

4.3.2. *Zero K* as a trauma narrative

Although *Zero K* undoubtedly shows some visibly techno-utopian passages, it ultimately warns against the disembodiment and the loss of identity fostered by life extension technologies and calls instead for a networked, embodied existence, as some critics have pointed out. For Cofer, it is the middle section of the novel, entitled "Artis Martineau," which provides readers with the most powerful critique of transhumanism (2). As noted earlier, that section calls the reader's attention, according to Cofer, to the depersonalization and disembodiment to which Artis is subjected in the cryonic pod, and posits embodiment and interaction with other human beings as essential to the construction and preservation of identity (9-10). While Cofer is right in that this passage is key in this respect, this chapter argues that DeLillo's critique of the disembodiment and the dehumanization fostered by the Convergence's technologies is carried out most

powerfully through his choice to write a psychic trauma novel. Surprisingly enough, the critical framework provided by trauma studies has not been used, to this date, to analyze DeLillo's novel. Nevertheless, the writer's formal and thematic choices in *Zero K* point to the fact that an analysis from this framework may be both appropriate and necessary, and may complement the study of the novel from the perspective of transhumanism and critical posthumanism.

According to trauma theorist Stef Craps, although theorizing about trauma started as early as the nineteenth century,[10] it was in the twentieth century, "an era saturated with unprecedented violent and wounding events," that it gathered momentum. The evolution of trauma as a discipline of study culminated, according to the same critic, in the year 1980, in the official recognition of "the phenomenon of trauma by the American Psychiatric Association under the title Post-Traumatic Stress Disorder' ('PTSD')" (9). Similarly, British Professor of Modern and Contemporary Literature Roger Luckhurst argues that the official recognition of PTSD as an illness "helped consolidate a trauma paradigm" that, by the turn of the century, had "come to pervade the understanding of subjectivity and experience in the advanced industrial world" (1). In the introduction to the edited volume *Trauma: Explorations in Memory* (1995), a seminal work in the field of trauma studies, Cathy Caruth claims that, although critics have provided different descriptions of post-traumatic stress disorder, most of them agree that

> there is a response, sometimes delayed, to an overwhelming event or events, which takes the form of repeated, intrusive hallucinations, dreams, thoughts or behaviors stemming from the event, along with numbing that may have begun during or after the experience, and possibly also increased arousal to (and avoidance of) stimuli recalling the event. (4)

The previous definition suggests, according to Caruth, that the pathology can neither be defined by the event itself nor "in terms of a *distortion* of the event." On the contrary, the pathology consists "solely in the *structure of its experience* or reception: the event is not assimilated or experienced fully at the time, but only belatedly, in its repeated *possession* of the one who experiences it" (4; emphasis in the original).

[10] In this sense, many of the issues that critical theorists and literary critics started to discuss in the 1980s had already been investigated by Sigmund Freud as "traumatic neuroses" (Collado-Rodríguez "Textual" 624; Caruth 5-6).

Hence, trauma victims may develop symptoms not immediately but sometime after the traumatic event, which points to the existence of different stages in the experience of trauma. In this respect, in her article "Bridging the Black Hole of Trauma: The Evolutionary Significance of the Arts," psychiatrist Sandra L. Bloom discusses how the human body responds to traumatic events. Traumatic experience provokes, according to Bloom, a physiological overload that our brains and bodies are unable to manage properly. In order to cope with this physiological overload, Bloom argues, human beings count with a defense mechanism called "dissociation" (200).[11] In her own words: "If the emotional state is so paralyzing that individuals cannot adequately protect themselves by either fighting or fleeing, then the only option they may have open is to separate from—or dissociate—from emotions entirely" (204). Bloom claims that, although dissociation may be "a life-saving coping skill in the short run," it provokes fragmentation of vital mental functions, the result being diminished integration and, therefore, impaired performance (200). Thus, after a traumatic event, victims may not be able to remember the terrible events that have just occurred, or they may remember the events but show no feeling about them (200-01). According to Bloom, it is precisely this problem with integration that propels "traumatic re-enactment," which she describes, in line with Caruth's definition of PTSD, as "the profound tendency to compulsively and behaviorally relive the traumatic experience outside of conscious awareness" (207).

In a similar vein, Luckhurst identifies a fundamental tension between "interruption and flow, blockage and movement" inherent in the experience of trauma. On the one hand, trauma "issues a challenge to the capacities of narrative knowledge." Thus, "in its shock impact," Luckhurst argues, "trauma is anti-narrative." On the other hand, it "generates the manic production of retrospective narratives that seek to explicate the trauma" (79). According to Luckhurst, as opposed to disciplines such as law, insurance, medicine, or psychiatry—which "have often been confounded by the strange suspension of causation that attend post-traumatic sequalae" (80)—cultural forms are particularly suited to address the above-mentioned contradiction. They rehearse or restage

---

[11] French psychologist Pierre Janet was a pioneer in the study of the phenomenon of dissociation. Two other important contributors to the explanation of this phenomenon are psychiatrist Bessel A. van der Kolk and psychologist Onno van der Hart. Synthesizing Janet's ideas, in their contribution to *Trauma: Explorations in Memory*, van der Kolk and van der Hart claim that "under extreme conditions, existing meaning schemes may be entirely unable to accommodate frightening experiences, which causes the memory of these experiences to be stored differently and not be available for retrieval under ordinary conditions: it becomes dissociated from conscious awareness and voluntary control" (160).

"narratives that attempt to animate and explicate trauma that has been formulated as something that exceeds the possibility of narrative knowledge" (79). Luckhurst then points to the appearance of an international canon of authors and works which deal precisely with both narrative possibility and impossibility in the face of trauma,[12] as well as to the emergence of "an implicit aesthetic for the trauma novel" (87).

According to Laurie Vickroy, literature, particularly trauma literature, can shed light on the ways human beings endure "the painful dilemmas we face in our culture, past and present," and act as a "barometer of social life and contemporary culture." In other words, it can be a means of denouncing the isolation, objectification, and other negative scenarios to which human beings are subjected under the current cultural regime. She also claims that, in spite of their criticism of certain aspects of the present cultural moment, trauma narratives often promote—a progressive hope that things might change. Consequently, she suggests that, when reading trauma literature, readers should pay attention to other more ethical, alternative behaviors suggested by the writers or the texts (*Reading* 180-183).

Thus, this last section of the chapter aims to explore the reasons why DeLillo's choice of a trauma narrative to fictionalize some of the ethical dilemmas that surround cryonics may be most appropriate. More specifically, this section contends that by interweaving different layers of trauma in the story, DeLillo ultimately leads readers to question the ethics of suspending our present lives and leaving behind our present embodied existence, our more intimate relationships, and our problems and responsibilities with the uncertain hope of being brought back to life in the future to enjoy eternal life, with or without our loved ones. Ultimately, as this chapter examines, *Zero K* proves to be a novel that lays the emphasis on the here and now and argues for the need to learn to cope with our traumas and fears in the present.

[12] Thus, Luckhurst regards Toni Morrison's *Beloved* (1987) as a "formative text in literary trauma studies," as it helped establish some of the "basic narrative and tropological conventions of trauma fiction" (90), but also mentions other texts by writers such as Margaret Atwood, Pat Barker, Anne Michaels, Binjamin Wilkomirski, and W. G. Sebald which show similar narrative patterns.

4.3.2.1 The narrative representation of psychological trauma: minimalism, flashbacks, repetitions, and intrusive images

The novel is divided into two different parts separated by a six-page section entitled "Artis Martineau." It opens with the protagonist and narrator Jeffrey Lockhart's retrospective account of his arrival to the Convergence. From Jeffrey's perspective, readers learn that he is there to accompany his father Ross, whose dying second wife Artis Martineau has decided to undergo cryopreservation. Suffering from several disabling illnesses, but being multiple sclerosis "largely responsible for her deterioration" (DeLillo *Zero K* 8), Artis's ailing body has reached a point of natural collapse. Upon the recognition that her days are numbered—and being apparently skeptical of the dogmas of any organized religion—Artis has decided to place her hopes of immortality in the Convergence's technologies.[13] Her husband Ross shows himself supportive and understanding; he does not seem to be bothered by the fact that she has renounced spending her last days with her loved ones. Jeffrey, by contrast, is more skeptical. From the very moment he sets foot on the Convergence, he conveys his reservations regarding the cryonics facility and its endeavor. Thus, he claims to feel "disoriented" and to experience a "sense of enclosure and isolation" (8, 16). He even expresses his wish to get out of the complex: "I wanted to get out of the chair, walk out of the room, say goodbye to her and leave. I managed to talk myself up to a standing position and then open the door. But all I did was walk the halls" (21). Seemingly, he describes the Convergence as "a barely believable place" (14), a "desert apparition" (14-15) and "a massive burial chamber" (15). Ultimately, he shows himself to be uncertain about Artis's decision to undergo cryopreservation, as can be traced in the following quotation: "I'd come to pay the briefest of visits and say *an uncertain farewell*" (4; my emphasis). It is precisely the narrator's inability to understand his stepmother's decision to abandon everything that seems to propel the reenactment of several traumatic memories, all stemming from one traumatic event he experienced when he was very young: his father's decision to abandon the family home when Jeffrey was just thirteen.

---

[13] Thus, the Convergence's life extension technologies help this character to overcome her fear of death or, to use trauma theorist Dominick LaCapra's words, her structural trauma. In his 1999 work "Trauma, Absence, Loss," LaCapra establishes a difference between historical trauma, which is related to a feeling of loss usually derived from a specific traumatic event, and structural trauma, which he connects to an absence or "a gap in existence" not necessarily "reduced to a dated historical event or derived from one" (727). Regarding structural trauma, Collado-Rodríguez argues that, for LaCapra, this type of trauma "results from the realization of the intrinsic mortality of the human condition" ("Trauma" 47).

As hinted at above, some formal features tend to recur in trauma narratives. In this respect, in her work *Trauma and Survival in Contemporary Fiction* Vickroy argues that there are some stylistic innovations which have proved to be particularly effective to reflect, formally, “the psychic defenses that pose obstacles to narrating and recovering from trauma” (xi). According to her, trauma narratives, apart from dealing with trauma as subject matter or character study, “internalize the rhythms, processes, and uncertainties of traumatic experience within their underlying sensibilities and structures” (3). Thus, some of the narrative strategies created by writers to represent the victim’s troubled or incomplete relation to memory are “textual gaps (both in the page layout and content), repetition, breaks in linear time, shifting viewpoints, and a focus on visual images and affective states” (29). Overall, by means of incorporating “the gaps, uncertainties, dissociations, and visceral details of living through traumatic experiences,” these narratives manage to immerse readers in the characters’ states of mind (*Reading* 3).

In a similar vein, Anne Whitehead claims that “effective” trauma fiction needs to register “the shocking and unassimilable nature of its subject matter in formal terms” (83). The impact of trauma, Whitehead argues, can be adequately represented only by means of unconventional narrative techniques. In her own words: “Novelists have frequently found that the impact of trauma can only adequately be represented by mimicking its forms and symptoms, so that temporality and chronology collapse, and narratives are characterized by repetition and indirection” (3). In using unconventional techniques or, as Whitehead puts it, “in testing formal boundaries,” trauma fiction tries to bring to the fore “the nature and limitations of narrative” as well as to convey “the damaging and distorting impact of the traumatic event” (82). Then Whitehead points to “intertextuality,” “repetition [at the levels of language, imagery or plot],” and “a dispersed or fragmented narrative voice” as three recurrent stylistic features in trauma narratives (84).

Zero K is a novel that shows many of the features to which Vickroy and Whitehead refer. DeLillo’s sparse, minimalist style, proves to be, on the one hand, a suitable means of conveying the troubled psychological condition of the protagonist and narrator. Thus, sentences are brief and straightforward and they tend to be grouped in short paragraphs, which are either pulled together or separated by gaps in page layout, formally mirroring the workings of Jeffrey’s traumatized mind. In some of his previous novels, such as *The Body Artist* and *Falling Man*, DeLillo had already relied on literary minimalism to convey the effects of trauma on the human psyche. Nevertheless, while these two novels featured

a heterodiegetic narrator, DeLillo introduces an autodiegetic one in *Zero K*, which brings readers allegedly closer to the protagonist's thoughts and emotions and, consequently, further enhances a sense of emotional and psychological breakdown.

In her review of the novel, Dini claims that the "sparse style" and the "linear narrative" of *Zero K* mirror "the barrenness of its setting and the shaved bodies of those being prepared for cryogenic preservation there" (1-2). While it is true that the style of the novel is sparse—being its main purpose, as has been argued above, to reflect the troubled mental processes of the traumatized narrator—it is undeniable that Jeffrey's remembrance of some traumatic past events produces constant chronological disruptions. In fact, readers learn about his unresolved past traumas by means of a series of flashbacks or intrusive memories, repetitions, and intrusive images which interrupt the main storyline—that is, Jeffrey's account of his trips to the Convergence—at different points, giving rise to a fragmented narrative that formally mirrors the psychological fragmentation of the protagonist.

Thus, at the beginning of chapter three, while Jeffrey is in the room where Artis awaits to be cryopreserved, waiting for her to wake up and uncertain about how he should start the conversation—"What do I say? How do I begin?" (DeLillo *Zero K* 13), Jeffrey wonders—his mind goes back in time to the moment when his father abandoned him and his mother:

> He left when I was thirteen. I was doing my trigonometry homework when he told me. He sat across the small desk where my ever-sharpened pencils jutted from an old marmalade jar. I kept doing my homework while he spoke. I examined the formulas on the page and wrote in my notebook, over and over: *sine cosine tangent*. (14; emphasis in the original)

This highly traumatic episode, which dates back to his early adolescence, eventually proves to be the main cause for his psychological fragmentation. All throughout the novel, but most remarkably during the time he spends at the Convergence, Jeffrey is revisited by this intrusive memory. However, it is only in chapter three that the narrator provides a more or less detailed account of what actually happened. From then onwards, the repetition of some words evidences the narrator's remembrance of his father's leaving—repetition at the level of language is, as explained above, a typical feature of trauma narratives (Whitehead 84). Three particular words, which appear repeatedly in the text and are presented in italics, seem to have stuck in his mind forever: "*sine cosine tangent*"

(14, 56, 234; emphasis in the original). These three words—which represent the main functions used in trigonometry—are associated by Jeffrey to that moment, as he explains later on: "*Sine cosine tangent*. These were the mystical worlds I would associate with the episode from that point on" (234; emphasis in the original).

Nevertheless, just before recounting this traumatic occurrence, Jeffrey had confessed that Ross had never been a very good husband or father, not even during the time the three of them had lived together. The narrator had described Ross as "a man shaped by money" who worked analyzing the profit impact of natural disasters in a New York office and who seemed to live "in a state of emergency" (DeLillo *Zero K* 13, 14).[14] Jeffrey had complained that when his father was not in his office, he was either "rushing to airports, or preparing for conferences." Even when he was at home, all he used to do was to stand "before a full-length mirror reciting from memory speeches he was working on about risk appetites and offshore jurisdictions, refining his gestures and facial expressions." Besides, Jeffrey had disclosed that, once, his father even "had an affair with an office temp" (14). With this introductory paragraph, Jeffrey makes it clear that his father's decision to abandon him and his mother had not been an unprecedented event but the inevitable conclusion to more than a decade of neglect. Thus, readers may realize that Jeffrey's psychological fragmentation is not just the result of an isolated traumatic event—Ross's decision to leave the family home—but also of a constant, insidious vulnerability (see Brown 107) derived from the prolonged absence of a reliable paternal figure.

Another episode Jeffrey keeps having flashbacks to throughout the story is his mother's death. From Jeffrey's perspective, we learn that, after Ross's decision to leave the family home, he and his mother Madeline developed a very close relationship. They used to go for walks together—"[w]ho does this, mother and teenage son, in the United States of America?" Jeffrey wonders—and, most importantly, she did not lecture Jeffrey on his "swerves out of observable normality" (DeLillo *Zero K* 15). She was, as opposed to his absent father, "the loving source, the reliable presence, a firm balance between me and my little felonies of self-perception" (108). Thus, in the second chapter of the novel, while Jeffrey is reporting the first conversation he has with his father upon his arrival to

[14] The fact that Ross has made a fortune and a reputation by analyzing the profit impact of natural catastrophes, literally makes him, according to Herbrechter, "a disaster capitalist" ("Posthumanism" 12), losing credibility in the eyes of the readers.

the cryonics facility, his mind goes back to the moment of his mother's death, an episode he remembers in a very particular way:

> When my mother died, at home, I was seated next to the bed and there was a friend of hers, a woman with a cane, standing in the doorway. That's how I would picture the moment, narrowed, now and always, to the woman in the bed, the woman in the doorway, the bed itself, the metal cane. (9)

As hinted at above, one of the narrative strategies used by writers to represent the victim's troubled relation to memory is the focus on visual images (Vickroy *Trauma* 29). In this respect, some critics refer to "the intrusive or recurrent image, the unbidden flashback that abolishes time and reimmerses you in the visual field of the inaugurating traumatic instant" as one of the most widely acknowledged symptoms of trauma and argue that traumatic images may even replace narrative memory in a traumatized mind (Luckhurst 147; see also Baelo-Allué 71). The woman in the bed, the woman in the doorway, the bed and the metal cane are things Jeffrey associates to that particular moment, and they reappear several times throughout the story in the form of intrusive images, proving that this particular episode still haunts the protagonist.

Thus, in chapter five, Jeffrey has a conversation with Ross and Artis while they are in her room waiting for her to be taken down to be cryopreserved. In this conversation, the couple expresses their firm belief in the Convergence's endeavor. At that moment, Jeffrey's mind goes back again to the moment of her mother's death, an episode he is still able to picture in detail: "I thought of the bed and the cane. My mother in bed, at the end, and the woman in the doorway, her friend and neighbor, ever nameless, leaning on a cane, a quad cane, a metal cane with four little splayed legs" (DeLillo *Zero K* 49). Later on, we learn that, if there is a reason why this episode would stick with Jeffrey forever, it is because his father was not there with him when his mother died. Therefore, readers are led to draw a connection between the two traumatic events and to distance ourselves even further from the protagonist's father—and, in turn, from the transhumanist values he incarnates.

In sum, as opposed to what happens in many trauma narratives, such as DeLillo's *Falling Man*, in which the main cause for the protagonist's psychological fragmentation is only disclosed towards the end of the story, it is from the very beginning of *Zero K* that readers learn about Jeffrey's unresolved past traumas. By means of some flashbacks that interrupt Jeffrey's narration of his first days at the Convergence, readers learn, firstly,

about his mother's death, and secondly, about his father's decision to abandon him and his mother. These two traumatic events, which eventually prove to be closely connected, keep haunting Jeffrey until the very end of the book, as evidenced by the frequent repetitions and intrusive images interspersed in his narrative.

All throughout the novel but most remarkably in part one, the flashbacks, repetitions, and intrusive images intermingle with Jeffrey's descriptions of his wanderings around the Convergence and the report of his conversations with Ross and Artis, in which Jeffrey shows himself skeptical. As already suggested, Jeffrey's reenactment of these traumatic memories seems to be, in fact, propelled by his inability to understand Artis's decision to undergo cryopreservation and his father's strangely supportive attitude. Nevertheless, the idea of Artis being taken down to the cryonics chamber eventually becomes traumatic itself for Jeffrey, as evidenced by the repetition of a series of sentences which show a similar structure and in which the narrator anticipates the moment when the workers of the Convergence will come to take Artis and perform the cryonics procedures on her body. Thus, at some point during the above-mentioned conversation Jeffrey has with Ross and Artis, he declares: "This is how I thought of it. *They would come and take her.* They would arrive with a gurney that had a reclining back, allowing her to sit up. They would have capsules, vials and syringes. They would fit her with a half-mask respirator" (DeLillo *Zero K* 49; my emphasis).

A few paragraphs later, Jeffrey's mind goes back to that thought: "*They would come and take her*. They would wheel her into an elevator and take her down to one of the so-called numbered levels. She would die, chemically prompted, in a subzero vault, in a highly precise medical procedure guided by mass delusion, by superstition and arrogance and self-deception" (DeLillo *Zero K* 50; my emphasis). This intrusive thought of Artis being taken to the cryonics chamber reappears yet one more time in chapter seven in part one, during one of Jeffrey's meals at the Convergence: "I thought of Artis. *This is the day when they come and take her.* But how do I think about what will happen once her heart stops beating?" (84; my emphasis). Ultimately, the traumatized narrator seems unable to differentiate between past, present, and future and, thus, also incapable of writing a chronological and coherent narrative of the events. Instead, mirroring the workings of his traumatized mind, the story is highly fragmented and full of flashbacks, repetitions and intrusive images, which enhances, in turn, a sense of emotional and psychological breakdown.

4.3.2.2. Clusters of intrusive obsessive thoughts

Further proof of Jeffrey's traumatized condition is provided in two different sections in which his mental state is presented as a cluster of intrusive obsessive thoughts. The first section, which is seven pages long, is located towards the end of chapter five in part one, after the above-mentioned conversation Jeffrey has with Ross and Artis before the latter is taken to the cryonics chamber (pages 53 to 59). In this conversation, Artis declares that she is convinced of the step she is taking and even looking forward to it: "I'm so eager. I can't tell you. To do this thing. Enter another dimension. And then return. For ever more. Say it. And say it. And say it." Following Artis's orders, and sharing in her confident attitude, Ross then pronounces, to Jeffrey's surprise, the word "Forevermore" (DeLillo *Zero K* 53). The second section, which is nine pages long, is located towards the beginning of chapter eight in part one, once the narrator realizes Ross has shaved his beard, an action he interprets as an anticipation that his father could be getting himself ready to undergo cryopreservation (pages 101 to 109). It is important to mention here that, upon his first arrival to the cryonics facility to say goodbye to Artis, the first thing Jeffrey realizes is that his father has grown a beard. Thus, the second chapter in part one starts in the following way: "My father had grown a beard. This surprised me. It was slightly grayer than the hair on his head and had the effect of setting off his eyes, intensifying the gaze. Was this the beard a man grows who is eager to enter a new dimension of belief?" (7). Furthermore, when strolling along the corridors of the Convergence, Jeffrey had encountered a naked, hairless mannequin that was fixed to the floor and seemed like "a molded plastic version of the human body, a jointed model of a woman" (24). Besides, many of the workers of the Convergence he had met thus far were bald. These apparently trivial encounters seem, nevertheless, to have an influence in the way Jeffrey interprets his father's decision to shave his beard: the narrator somehow anticipates that his father could be getting himself ready to depart this world.

Artis and Ross's deep faith in the Convergence's endeavor, together with the realization that Ross could be considering the possibility of undergoing cryopreservation—abandoning his son, therefore, one second time—propel the intensification of the narrator's traumatic symptoms. In two highly fragmented sections in which Jeffrey's troubled thoughts are presented and intertwined without chronological order, readers become aware of the narrator's worsened psychological condition. In each of these sections, there are different lines of argument that interweave arbitrarily. Thus,

Jeffrey's traumatized mind shifts from one idea to the next, going back and forth without following a logical pattern, which ultimately seems to enhance the reader's sense of psychological breakdown.

Hence, in the first section, there are different plot lines that can be grouped according to their temporal occurrence. On the one hand, Jeffrey confesses some irrational phobias, obsessions, and habits he developed during his teenage years because of his father's decision to leave the family home. Thus, towards the beginning of the section, readers learn that he was afraid of visiting other people's houses, as very often he found things in there that made him, as he narrates, "want to run and hide, partly from my own fastidiousness. The bedrooms with unmade beds, somebody's socks on the floor, the old woman in night-clothes" (DeLillo *Zero K* 54). Two pages later, Jeffrey goes back to this idea, confesses to be distressed by "the smell of other people's houses" or "the kid who posed for me in his mother's hat and gloves" (56). He then admits that a roller his mother used to pick up lint also fascinated him. As he narrates, "I used to watch her guide the device over the back of her cloth coat" (55). Three pages later, Jeffrey goes back to this idea, stating that it was satisfying for him to watch this, maybe because he could "imagine Madeline taking commonplace pleasure in the simple act of draping her coat on a hanger, strategically arranging the coat on a closet door and then removing the accumulated lint with a roller" (58-9).[15] Furthermore, readers learn that Jeffrey kept trying to define words or checking the dictionary for definitions of words he was not familiar with: "Define *lint*, I tell myself. Define *hanger*. They I try to do it" (59; emphasis in the original), the narrator states towards the end of the section. As will be explained later on, these habits could be interpreted as attempts on the part of the narrator and protagonist to find meaning in the face of the disruption caused by trauma.

On the other hand, Jeffrey tells readers about the sense of being lost that he experienced a few years later, which appears to be a consequence of his childhood trauma. Thus, towards the beginning of the section, the narrator states that, after his father's decision to leave the family home, he had initially planned to build a life in opposition to the latter's "career in global finance" (DeLillo *Zero K* 54). He later on confesses, though, that his initial plan had been frustrated, as he had ended up changing jobs and cities often,

[15] In this respect, North-American sociologist Kai Erikson argues that reacting in unexpected ways when confronted with everyday sights and sounds is in fact one of the symptoms that trauma victims may develop after their exposure to a traumatic event (184).

being "the drift, job to job, sometimes city to city . . . integral to the man I was" (57). Finally, Jeffrey also tells readers, at different points throughout the section, about two of the girlfriends he had at the time. "Gale, or Gail," who was "so tall and thin she was foldable" (56), and Paula, "from Twin Falls, Idaho, eager tourist and manager of a steakhouse" (57)—yet another proof of the fact that the fragmentation caused by trauma had come to permeate every aspect of his life.

Finally, interspersed with all these memories are some comments which show the narrator's uneasiness with regard to his room at the Convergence—a room he refers to as "the room in the long empty hall," with "the chair, the bed the bare walls, the low ceiling." More specifically, the narrator claims that, when sitting in that room, as well as when wandering the halls of the Convergence, he can feel himself "lapsing into my smallest self, all the vainglorious ideas around me shrunk into personal reverie" (DeLillo *Zero K* 56). He then narrates how one day, for no apparent reason, he tried to "raise a hand and touch the ceiling" (57), or how he sometimes stands in the room with his eyes shut, which makes him think that he could be suffering from a mental disorder. "Are there other people who shut their eyes in a dark room? . . . Or am I behaving in a way that has a psychological basis, with a name and a history?" (58), Jeffrey wonders.

The second section, which is located after Jeffrey realizes that his father could be considering the possibility of joining Artis and undergoing cryopreservation too, works in a similar way: it is a highly fragmented section in which we find different lines of argument that interweave. In contrast to what happened in the previous section, in this section there are no references to Jeffrey's stay at the Convergence. Nevertheless, we do find references, once again, to some irrational habits the narrator developed during his early teens, after his father abandoned him, as well as memories from the time he was a little bit older, when his mother was still alive. Although apparently unconnected, all these recollections eventually prove to be, in a direct or indirect manner, related to the trauma derived from his father's absence and triggered by the premonition that Ross could be about to abandon him one second time. Thus, readers learn about a limp the protagonist developed when he was fourteen, just after his father decided to leave the family home. As regards the limp, Jeffrey states: "I didn't care if it looked fake. I practiced at home. . . . It was a limp set between quotation marks and I wasn't sure whether it was intended to make me visible to others or just to myself" (DeLillo *Zero K* 101). Later, Jeffrey's mind goes back to this idea: "The limp was my faith," he confesses, it "was something to cling

to, a circular way to recognize myself, step by step, as the person who was doing this" (103). Towards the end of the section, Jeffrey explains that he used to kill the limp whenever his father showed up to take him to the Museum of Natural History, a place which the protagonist describes as "the estranged husbands' native terrain. . . . There we were, fathers and sons, wandering among the dinosaurs and the bones of human predecessors (107). This ultimately confirms our suspicions that the narrator could have developed the limp as a way of expressing the pain derived from not having a paternal figure to lean on. Remarkably enough, the protagonist develops the limp, once again, at the very end of part one of the novel, just when he and his father are about to return to New York, after Ross's key revelation and his eventual backing down.

In this section, the narrator also recounts his failed attempts at being bookish. "I wanted to be bookish and failed. I wanted to steep myself in European Literature" (DeLillo *Zero K* 102). Three pages further on, he continues:

> I wanted to read Gombrowicz in Polish. I didn't know a word of Polish. I only knew the writer's name and kept repeating it silently and otherwise. . . . I'm fourteen or fifteen and keep repeating the name softly, Gombrowicz, Witold Gombrowicz, seeing it spelled out in my head and saying it, first name and last—how could you not love it—until my mother elevates her gaze from the bowl and delivers a steely whisper, *Enough.*" (105; emphasis in the original)

Jeffrey also recounts, at two different points in the section, how he used to take phone messages for his mother Madeline, and nervously wait until she returned the phone call. The narrator also tells readers that his mother occasionally went to the theater with a skinny man Jeffrey had decided to name Rick Linville, a name "that was suited to his height, weight and personality" or about someone she saw "on Fridays only, twice a month maybe, or only once, and never in my presence" (103, 107). Madeline refused to tell Jeffrey the name of this person she saw on Fridays. As a result, Jeffrey imagined "a married man, a wanted man, a man with a past, a foreigner in a belted raincoat with straps on the shoulders" (107), which was, he confesses, just a cover-up for the uneasiness he felt. "Maybe it wasn't even a man" (108), Jeffrey ponders towards the end of the section.

There is yet another remarkable line of argument in this section, which dates back to when Jeffrey was already a full-grown adult. At several points throughout the section, Jeffrey's mind keeps going back to the paper napkins his mother used when he visited her and the two of them ate a meal together. As he narrates: "Later, living elsewhere, I visited

Madeline fairly often and began to notice that when we ate a meal together she used paper napkins instead of cloth, because, understandably, it was only her, just another solitary meal, or only her and me, which came to the same thing" (DeLillo *Zero K* 102). What seems to have stuck in Jeffrey's mind forever is the fact that her mother used to avoid touching the paper napkins. She used instead "a facial tissue sticking out of a nearby box," or she walked "over to the roll of paper towels in the rack above the kitchen sink . . . tearing off a segment of a single towel and wiping her mouth on it and . . . leaving the paper napkin untouched" (103). "She wanted the paper napkin untouched" (106), Jeffrey repeats later on.

In the midst of all these recollections, Jeffrey's mind goes back to two particular episodes that also seem to have stuck in his mind forever. These episodes are only mentioned once in the nine-page section but are worth explaining because they reverberate throughout the novel. Firstly, towards the middle of the section and with a very long sentence with almost no punctuation, Jeffrey recalls what he was doing when he found out that Ross Lockhart was not his father's real name:

> Names. Fake names. When I learned the truth about my father's name, I was on holiday break from a large midwestern college where all the shirts, sweaters, jeans, shorts and skirts of all the students parading from one place to another tended to blend on sunny football Saturdays into a single swath of florid purple-and-gold as we filled the stadium and bounced in our seats and waited to be tracked by the TV cameras so we could rise and wave and yell and after twenty minutes of this I began to regard the plastic smile on my face as a form of self-inflicted wound. (DeLillo *Zero K* 104)

The absence or scarcity of punctuation, which is a recurrent feature in trauma narratives, formally reflects the way Jeffrey's thoughts flow in his traumatized mind and shows that he is deeply affected by his father's decision to change his name. Earlier on, in chapter seven in part one, Jeffrey had already told readers about his father's decision to change his name, from Nicholas Satterswaite to Ross Lockhart. It had been his mother Madeline, while the two of them were watching TV sometime after Ross had left the house, who had informed Jeffrey about how his father changed his name when he got out of college. Madeline had told him that, for Ross, his new name was "a challenge, . . . an incentive," and that "it would motivate him to work harder, think more clearly, begin to see himself differently" (81). For Jeffrey, nevertheless, his father's decision had been a way of breaking with his past, a way of abandoning "his generational history, all the lives up to

mine that were folded into the letters of this name." Ultimately, Ross's decision had affected the way Jeffrey regarded himself. He was not Jeffrey Lockhart anymore but Jeffrey Satterswaite: "I was someone I was not supposed to be" (82), he states at some point in that chapter. The impossibility to trace his origins may be the reason why he has trouble defining his own identity and may, in turn, explain why he is obsessed by defining words and things.

Secondly, towards the end of the eight-page section, Jeffrey recounts that he was at the airport when he saw Ross on the cover of *Newsweek* magazine "with two other godheads of world finance." What he did then was to pick up the phone to call Madeline "so I could refer to his serial killer's sideburns." However, it was her neighbor—"the woman with the metal cane, the quad cane"—who picked up the phone and told him that "Madeline had suffered a stroke and that I must come home at once" (DeLillo *Zero K* 109). This moment would stick with Jeffrey forever, as evidenced by that fact that later on in the novel, when he finally decides to put his trauma into words, he remembers his father being on the cover of *Newsweek*—meaning, absent—when his mother died. Jeffrey's stream of consciousness ends with a reference to the roller his mother used "to remove lint from her cloth coat," as well as with his attempt to define some words—"Define *coat*, I tell myself. Define *time*, define *space*" (109; emphasis in the original)—which, in turn, connects this section to the previous cluster of random obsessive thoughts.

Once the intrusive thoughts come to an end, the narrative goes back to the suite where Ross and Jeffrey converse on the appropriateness of Artis's decision. "You shaved your beard. Took me a few minutes to notice. I was just getting adjusted to the beard," Jeffrey tells Ross, as if trying to find out what his intentions really are. Ross himself soon confirms Jeffrey's prediction: "I'm going with her" (DeLillo *Zero K* 110), the man declares. At this point, Jeffrey's confusion does nothing but increase. His own father is giving him yet another reason to be upset:

> "You're going with her."
> It was necessary for me to repeat those words. *Going with her*. . . .
> The simple fact of these words, the immense force gathering behind them, turning me inside out. (110; emphasis in the original)

Ross then tries to explain to Jeffrey the reason why he has decided to join Artis. "I don't want to lead the life I'll be leading without her" (110), he declares. Nevertheless, Ross

eventually backs down and abandons his initial idea of joining Artis, at least temporarily. A conversation the two of them have, in which Jeffrey expresses his anger and tries to make his father realize how his decision diminishes him, proves to be key in this respect. However, not long after, Ross starts recalling things he and Artis used to do together, something that bothers Jeffrey: "He wasn't finished, a man propelled into obsessive reflection" (150), the narrator observes.

4.3.2.3. Acting out and working through

As argued in the previous section, from the very moment he sets foot on the Convergence and, all throughout the story, Jeffrey shows symptoms of being traumatized. The flashbacks, repetitions, intrusive images, and other symptoms of his condition—which interrupt the narration of his trips to the Convergence at different points—prove that the narrator is still in the acting out stage of his trauma. Dominick LaCapra, a well-known theorist of trauma, uses the term "acting out"—which he borrows from Freudian psychoanalytic theory—to refer to this stage in which "the past is compulsively repeated as if it were fully present, resistances are not confronted, and memory as well as judgment is undercut" (*Representing* 48). In this stage, victims of trauma tend to "relive occurrences," or at least find that those occurrences "intrude on their present existence" in the form of flashbacks, nightmares or words that are instinctively repeated and that have apparently lost their ordinary meaning (*Writing* 143). Then, also borrowing the term from Freudian psychoanalysis,[16] LaCapra claims that the subsequent phase of the traumatic experience is the "working through" stage. This is the stage in which the victim begins to assimilate the traumatic memories or come to terms with the past, acquiring, at the same time, "some critical distance that allows one to engage in life in the present, to assume responsibility." In order to overcome trauma, victims need to move, according to LaCapra, from the acting out to the working through stage—even if he acknowledges that this movement "may never be totally or definitively accomplished" (*Writing* 148). The impossibility to understand why Artis has renounced to spending the time she has left with her loved ones, together with his father's strangely supportive attitude, and the constant threat of being abandoned one second time by him, keep Jeffrey trapped in the

[16] The concepts of acting out and working through were first introduced by Freud in his 1914 essay "Remembering, Repeating and Working-Through."

acting out stage. Thus, he is unable to move towards the working through stage to overcome his trauma.

Another character who shows a troubled mental condition—even if he is not, unlike Jeffrey, a victim of trauma per se—is Ross. This character's existential dread becomes most evident towards the end of part one of the novel, once Artis is about to be cryopreserved. He fears not being able to live without her and obsessively keeps recalling things the two of them used to do together, something that bothers Jeffrey. Part two of the novel starts with Jeffrey recounting what his life and that of his father in New York are like after their return from the Convergence. Two years have passed since then and, from Jeffrey's perspective, readers learn that, during this time, Ross has been finding it very difficult to live without Artis. He has become unmotivated and apathetic:

> It turned out that my father was not interested in history or technology or hailing a cab. He let his hair grow wild and walked nearly everywhere he cared to go, which was nearly nowhere. He was slow and a little stooped and when I spoke about exercise, diet and self-responsibility, we both understood that this was just an inventory of hollow sounds.
>
> His hands sometimes trembled. He looked at his hands, I looked at his face, seeing only an arid indifference. When I gripped his hands once to stop the shaking, he simply closed his eyes. (DeLillo *Zero K* 168)

Furthermore, he seems to be absent-minded all the time, thinking about the Convergence and everything he has left behind: "Sometimes I follow along and stand a while in the doorway, watching the man stare at something that is not in the room. He is remembering or imagining and I'm not sure if he is aware of my presence but I know that his mind is tunneling back to the dead lands where the bodies are banked and waiting" (DeLillo *Zero K* 168). In his contribution to the volume *Trauma: Explorations in Memory*, Erikson describes trauma as something that "invades you, takes you over" and that "threatens to drain you and leave you empty" along the way (183). Then, he argues that victims of trauma may develop contradictory symptoms, "from feelings of restlessness and agitation at one end of the emotional scale to feelings of numbness and bleakness at the other" (183-84). Thus, the traumatized may go through periods of "nervous activity"—they may anxiously scan their surroundings for signs of danger, "breaking into explosive rages and reacting with a start to ordinary sights and sounds," as is often the case with Jeffrey—but at the same time feel depressed and helpless (184), as is the case with Ross. Rather than trying to cope with his problems, Ross considers

throughout the novel undergoing cryopreservation with the hope of being reawakened in the future to enjoy eternal life with Artis. The Convergence's technologies promise to offer Ross, therefore, a way of escaping his existential angst.

As opposed to what happens with Ross, who turns to the Convergence's technologies to escape his condition, throughout the story Jeffrey keeps trying to overcome his traumatic symptoms and move towards the working through stage—even if to no avail. On the one hand, readers become witnesses to the narrator's constant search for order, which dates back to his early adolescence. According to Vickroy, trauma victims tend to develop some strategies of resistance to counteract the negative effects of fragmentation. In her own words: "Because fragmentation creates a profoundly disturbing sense of self, victims go to great lengths to resist it. Consequently, the attempt to create or maintain a sense of agency and order and reject fragmentation is a common strategy of the narrators/protagonists of trauma fiction" (*Trauma* 24). In her analysis of *Falling Man*, Sonia Baelo-Allué claims that, in the aftermath of the attacks on the World Trade Center, Keith and his wife Lianne repeat some actions in an attempt to imbue their lives with a sense of order. Thus, Keith performs "a program of exercises for his postsurgical wrist" two or three times a day, even after his wrist is fine again, "counting the number of times each day, the repetitions and the five seconds, as he also counts the days after the collapse of the Twin Towers." Lianne, for her part, keeps counting down from one hundred by sevens. These repetitions provide the two traumatized characters, according to Baelo-Allué, "with some structure in their chaotic thoughts" (71). In a similar vein and, as hinted at above, in *Zero K* readers learn that, after his father abandoned him, Jeffrey kept trying to define some words—"I'd been doing this for a while, attempting to define a word for an object or even a concept. Define *loyalty*, define *truth*. I had to stop before it killed me" (DeLillo *Zero K* 55; emphasis in the original), he confesses.

Similarly, during his stay in the Convergence and, in an attempt to make sense of what is happening around him or, in his own words, "inject meaning, make the place coherent" (DeLillo *Zero K* 10), Jeffrey keeps naming all the different shades of blue in which the doors of the Convergence are painted. As he reports in his story: "The doors here were painted in gradations of muted blue and I tried to name the shades. Sea, sky, butterfly, indigo" (23). Furthermore, he seems to be obsessed with the idea of knocking on those doors: "All I had to do was knock on a door. Pick a color, pick a door and knock. If no one opens the door, knock on the next door and the next" (24). Soon after, he is

revisited by these thoughts and finally decides to do it: “Finally I decided that I had to find out whether there was anything behind the doors. I dismissed the possible consequences. I walked down the hall, chose a door and knocked. I waited, went to the next door and knocked. I did this six times and told myself one more door” (25).

In addition, upon his return to New York after both his first and second trips to the Convergence, Jeffrey keeps checking the stove after turning off the burners and checking his pockets to make sure his keys or his wallet are there, yet another attempt at searching for order:

> I keep checking the stove after turning off the burners. At night I make sure the door is locked and then go back to whatever I was doing but eventually sneak back to the door, inspect the lock, twist the door handle in order to verify, confirm, test the truth of, before going to bed. When did this begin? I walk down the street checking my wallet and then my keys. Wallet in left rear pocket, keys in right front pocket. (DeLillo *Zero K* 183)

Upon his return to New York, Jeffrey meets a woman named Emma Breslow, with whom he starts a romantic relationship. Emma works as a counselor in a school for children with different disabilities and developmental issues—“ranging from speech disorders to emotional problems” (DeLillo *Zero K* 189)—and has an adopted son that she and her ex-husband rescued from a Ukrainian orphanage when the kid was just five or six years old. Emma and her son Stak are the only characters in the story with whom Jeffrey is able to connect. As for Stak, the fact that they are both victims of trauma—they were both abandoned when they were kids—and that they both show various personality disorders is what seems to bring them together. Readers learn that Stak “likes to recite temperatures. The numbers tell him something. Tucson one hundred and three degrees fahrenheit. He always specifies fahrenheit or celsius” (176). Furthermore, he sometimes alters “his voice for days at a time” (195). “We were getting along pretty well, he and I” (214), Jeffrey recognizes at some point. As regards Emma, Jeffrey claims that she keeps him “free of total disaffection” (187). This is how Jeffrey describes their relationship: “We were two individuals exploring a like-mindedness, determined to keep clear of the past, defy any impulse to recite our histories. We weren’t married, we didn’t live together but we were braided tight, each person part of the other” (175). Nevertheless, even though they undoubtedly get along well, and complement and support each other, the couple’s refusal to talk about the past may be one of the reasons why Jeffrey is not able to work completely through his trauma.

Nevertheless, perhaps the most remarkable attempt on the part of Jeffrey to work through his trauma is when he finally decides to open up and put his condition into words, something that trauma theorists regard as a necessary step towards healing. In her article "Bridging the Black Hole of Trauma: The Evolutionary Significance of the Arts," Bloom stresses the benefits of emotional expression in this respect. She quotes the founders of psychoanalytic theory Josef Breuer and Sigmund Freud who, in their work *Studies on Hysteria*—originally published in 1895 in German under the title *Studien über Hysterie*—already commented about the positive implications for trauma victims of putting their affect into words:

> Each individual hysterical symptom immediately and permanently disappeared when we had succeeded in bringing clearly to light the memory of the event by which it was provoked and in arousing its accompanying affect, and when the patient had described that event in the greatest possible detail and had put the affect into words. (Breuer and Freud 6, qtd. in Bloom 209)

Thus, Breuer was the first to practice the cathartic method, a method that would lay the basis for the later development of Freudian psychoanalytic theory. Although this method was based mainly on the verbal disclosure of repressed emotions—good proof of this is that it was also known as the 'talking cure'—it proved that transforming trauma into a coherent narrative could indeed have a cathartic effect. Another critic who has more recently stressed the benefits of emotional expression in the process of recovery from trauma is Professor of psychiatry Dori Laub. In his contribution to *Trauma: Explorations in Memory*, Laub claims that the testimony is "the process by which the narrator (the survivor) reclaims his position as a witness: reconstitutes the internal 'thou,' and thus the possibility of a witness or a listener inside himself." Thus, "repossessing one's life story through giving testimony is," Laub argues, "a form of action, of change, which one has to actually pass through, in order to continue and complete the process of survival after liberation" (70).

Hence, one day, Ross asks Jeffrey to come to his apartment. He wants to discuss something with his son. As Jeffrey recounts in chapter three of part two of the novel, "He had asked me to come, saying there was an idea he wanted to propose" (DeLillo *Zero K* 183-84). Thus, in "his room of monochrome paintings" (183), Ross tells Jeffrey that he

is "in the process of donating some of his art to institutions and giving a few smaller pieces to friends," and that he wants to give him a painting, or "possibly more than one" (185). However, Ross has a second preoccupation: he wants to find out whether Jeffrey would like to live in his flat eventually. The fact that he is making arrangements regarding his properties leads readers to think that Ross could be considering the possibility of going back to the Convergence—the fact that his hand is trembling as he is speaking to Jeffrey is also revelatory in this respect. Ross's proposal surprises Jeffrey. As he narrates: "It surprised me, his belief that I might want to live here at some unspecified future time" (185). The protagonist declines his father's offer, stating that he would prefer to live in his apartment in an old building on the upper east side: "I told him that I didn't know how to live here. . . . I would be a tourist here. . . . I knew how to live where I was living" (185-86). However, then Jeffrey admits that his resentment towards his father has clearly influenced his decision: "But wasn't it more complicated than that? There was a punishing cut to these remarks, a cheap rejection dredged from the past" (186).

In the following chapter, Jeffrey recounts how sometime after this meeting, he and his father have lunch together in an expensive restaurant, something that he considers to be excessive and unnecessary: "I didn't need lunch in a midtown temple of cuisine art where jackets are required and the food and flower arrangements are said to be exquisite and the staff more competent than pallbearers at a state funeral." When Ross arrives at the restaurant, Jeffrey describes how "the vested gray suit and bright tie set off his wildman beard and halting stride" (DeLillo *Zero K* 200). From Jeffrey's perspective, readers also become aware of Ross's nervousness and absent-mindedness: "Here was Ross, eyes tired and shoulders hunched, right hand trembling slightly, . . . the memory remained alive in his eyes. He was seeing Artis across the table, across the years, a kind of waveform, barely discernible" (201-02). Ross's restlessness, together with the fact that he has grown a beard again,[17] are hints that may lead readers to think that he is about to make an important announcement. This suspicion seems to be shared by Jeffrey. In fact, it is precisely the feeling that Ross could be considering going back to the Convergence what seems to propel the protagonist to open up and finally put his trauma into words.

[17] This seems to take Jeffrey back to his first journey to the Convergence and, more specifically, to the moment when, just after shaving his beard, his father first announced that he was planning to undergo cryopreservation.

Thus, Jeffrey lets his father know about the highly traumatizing episode of his mother's death, an episode that he recounts in detail:[18]

> Then I told him a story that made him pause. I told him how his wife, the first, my mother, had died, at home, in her bed, unable to talk or listen or to see me sitting there. I'd never told him this and I didn't know why I was telling him now, the hours I'd spent at her bedside, Madeline, with the neighbor in the doorway leaning on her cane. I found myself going into some detail, recalling whatever I could, speaking softly, describing the scene. The neighbor, the cane, the bed, the bedspread. I described the bedspread. I mentioned the old oak bureau with carved wings for handles. He would remember that. (DeLillo *Zero K* 202-03)

Jeffrey's intention is not to make his father feel bad about not being there when all this happened. He just needs a witness to his trauma. He could even be giving his father a second opportunity: "I think I wanted him to be touched. I wanted him to see the last hours as they happened. There was no dark motive. I wanted us to be joined in this." However, Ross does seem to feel, even if just for a moment, a little bit guilty: "Where was I when this happened?," Ross asks Jeffrey. "You were on the cover of *Newsweek*" (203; emphasis in the original). Nonetheless, once again, Ross's guilt for being absent in such a difficult moment for his son soon fades away. After Jeffrey's confession, in a very inappropriate way, Ross announces his decision to go back to the Convergence to undergo cryopreservation. He cannot live without Artis:

> "Do you know why we're here?"
> "You said you were last here with Artis."
> "And she is forever part of what we are here to discuss." . . .
> "It's time to be going back," he said. "And I want you to come with me." (203-04)

Instead of spending the time he has left in this world with Jeffrey—and trying to compensate for the psychological damage he has caused on him—Ross decides to prematurely undergo cryopreservation, abandoning his son, therefore, one second time, with the uncertain hope of being reawakened in the future to enjoy eternal life with Artis. What is more, he wants his son to bear witness to the process. Thus, Jeffrey's attempt to

[18] As opposed to those critics who argue that trauma is something that cannot be fully grasped or remembered (Caruth 4; van der Kolk van der Hart 160; Bloom 200-04), recent psychological research suggests that, after a traumatic event, memory is enhanced rather than undercut. Thus, trauma victims may be able to provide detailed accounts of their experiences (McNally 62; Pederson 333-340).

work through his trauma is frustrated. Ross is abandoning him a second time and refusing to support him on his healing process. Instead of worrying about Jeffrey's feelings, Ross is more concerned with making the necessary arrangements regarding his personal properties. In this way, he asks Jeffrey to "think about the other matters," referring to their previous conversation on the monochrome paintings and Ross's townhouse. Jeffrey, for his part, is not interested in his father's material possessions: "I don't want a painting. I don't want what people are supposed to want." What he really wants is to have the love and support of his father, something he did not have when he was a kid, and will never have in view of Ross's decision to go back to the Convergence. Jeffrey puts an end to his narration of the lunch date by saying: "We did not speak, Ross and. . . . [W]e thought about the journey ahead and we drank our fortified wine" (DeLillo *Zero K* 205). This evidences that, once his attempt at working through has been frustrated, the only thing left for him to do is to remain silent and drink in an attempt to forget.

After the lunch with his father, Jeffrey gets a job as the compliance and ethics officer for a college in western Connecticut—a job, according to Jeffrey, "suited to my preferences and central to my past experience" (DeLillo *Zero K* 222). While we may be led to think that he could be starting to rebuild his life, Jeffrey's traumatic symptoms, as well as the narrative fragmentation, persist until the very end of the novel, showing the protagonist's inability to reconcile himself with the past after his father's refusal to help him on his process of healing:

> I listen to classical music on the radio. I read the kind of challenging novel, often European, sometimes with a nameless narrator, always in translation, that I tried to read when I was an adolescent. Music and books, simply there, the walls, the floor, the furniture, the slight misalignment of two pictures that hang on the living room wall. I leave objects as they are. I look and let them be. I study every physical minute. (218)

> I check the stove after turning off the burners and then make sure the door is locked by unlocking it and then relocking it. (222)

Yet, there is one last attempt on the part of the protagonist to work through his trauma. At some point before accompanying Ross in his final trip to the Convergence, Jeffrey feels the need to tell everything to Emma. He seems to have accepted his father's situation and got over the barrier that prevents him from talking to her about the past:

> I didn't know how I felt about going back there, the Convergence, that crack in the earth. Here, in the settled measure of days and weeks, there were no arguments to make, no alternatives to propose. I'd accepted the situation, my father's. But I needed to talk to Emma beforehand, tell her everything, finally, father, mother, stepmother, the name change, the numbered levels, all the blood facts that follow me to bed at night. (DeLillo *Zero K* 226-27)

Nevertheless, Emma is not there for him anymore. She has fled to Denver to join her ex-husband in the search for their son Stak, who has been missing for five days. Jeffrey's attempt to work through his childhood trauma, once again, becomes frustrated. At the impossibility of talking to Emma, who disappears forever after this incident, Jeffrey even thinks about taking his life, which is yet another hint that he is far from recovering from his trauma:

> I stood in the bedroom and felt defeated. It was a cheap and selfish feeling, a bitterness of spirit. Rain was hitting the window and I lifted it open and let the cool air enter. Then I looked in the mirror over the bureau and simulated a suicide by gunshot to the head. I did it three more times, working on different faces. (227)[19]

Chapter nine in part two, the second to last chapter of the novel, is also key in this respect, as it is a highly fragmented chapter in which Jeffrey describes, in a stream-of-consciousness-like manner, what his life is like after his return from his second trip to the Convergence, once Ross has been cryopreserved. The chapter comprises eight pages in which we find a succession of thirty short paragraphs, visually separated by gaps in an attempt to restage Jeffrey's flow of troubled thoughts and memories. Thus, readers learn about Jeffrey's visits to his father's townhouse. During these visits, he sometimes feels the need to enter "the room with the monochrome paintings, recalling the final words Ross managed to speak" (DeLillo *Zero K* 268). Other times, he turns on and off "a lamp hanging from the ceiling in the guest room of the townhouse" (269). Jeffrey also admits to being haunted by Ross and Artis's decision to prematurely undergo cryopreservation: "I stand forever in the shadow of Ross and Artis and it's not their resonant lives that haunt me but their manner of dying" (266). In this respect, the narrator also confesses having

[19] Although Jeffrey's fate is less tragic than Thassa's in *Generosity* or Mercer's in *The Circle*, the fact that all the main characters of dissent portrayed in the novels either consider or manage to put an end to their own lives is not without implications. With this choice, the writers establish a contrast between the optimistic transhumanist discourse and the suffering that the different technologies depicted in the novels inflict on those who choose to remain at the margins.

nightmares he cannot easily take off his head: “[S]ometimes it takes an entire morning to outlive a dream, to outwake a dream” (267), he narrates.

Sometimes he sees himself in a room at the Convergence, probably Ross’s room, just before the latter is taken to the cryonics chamber. “Sometimes I think of the room, the scant roomscape, wall, floor, door, bed, a monosyllabic image, all but abstract, and I try to see myself sitting in the chair . . . waiting for his escort to knock on the door” (DeLillo *Zero K* 271). Readers also learn about his wanderings around Emma’s neighborhood, “expecting to see nothing, learn nothing, but feeling an immanence, the way in which a painful loss yields a shadow presence” (267). And his hope that she will someday call him “because she is out there somewhere, in the digital wilderness, and the ringtone, rarely heard, is her implied voice, an instant away” (269). Jeffrey regrets having waited too long to tell Emma about “the histories of Madeline and Ross, and Ross and Artis, and the still-life future of father and stepmother in cryonic suspension” (271). Overall, this highly fragmented chapter proves that, rather than progressively coming to terms with the past, Jeffrey is condemned to remain forever trapped in the acting out stage of his trauma.

4.4. CONCLUSION

At a time when technology promises to allow human beings to take control of our lives and transcend any kind of boundary, “what it means to be human is less certain than ever” (Herbrechter “Posthumanism” 1). The idea of using technology to postpone or even transcend death is, precisely, one of the most widely discussed subjects in transhumanist circles. While scientists struggle to find a definitive *cure* for ageing, some people increasingly consider cryonics as the safest option. Good proof of this is the fact that Alcor counts now with over a thousand members and that, to this date, over a hundred people have been cryopreserved at its facilities in Scottsdale, Arizona. As already mentioned, under current laws, a patient must have been declared legally dead in order for the cryopreservation procedures to begin. This makes one wonder what would happen if future laws allowed freedom of choice in this matter, which is precisely one of DeLillo’s main concerns in *Zero K*. According to Herbrechter, “in narrating the accelerated posthumanisation of ‘late’ (contemporary) culture, DeLillo finds a role for the new century, . . . namely that of a *critical* posthumanist, or a critical observer of the

current redefinition of the human (and its limits)" ("Posthumanism" 5; emphasis in the original). As this chapter has set out to demonstrate, DeLillo explores in *Zero K* both the possibilities and the challenges that life extension technologies pose for human beings. Nevertheless, the writer ultimately suggests that having the possibility of 'suspending' our present lives to undergo cryonics could present us with a complex ethical dilemma. Should human beings embrace the possibilities that cryonics offer to escape our present problems and existential angst (derived, for instance, from the fear of death, the loss of a loved one, or the threats posed by anthropogenic climate change, technology, and war) and place our hopes in the future? Or should we learn to live with these problems and face death as an integral part of being human, enjoying the here and now and taking care of both human and non-human entities around us?

Even if DeLillo fictionalizes both sides of this debate, with his choice to write a narrative of trauma he ultimately aligns himself with those who regard life extension technologies as a threat to our very humanness. Thus, by making use of a series of narrative strategies that are typical of the narratives of trauma, the writer reenacts in *Zero K* the workings of the autodiegetic narrator's traumatized mind, a man abandoned by his father when he was just thirteen who reenacts his childhood trauma as soon as he sets foot on the Convergence. By making use of a minimalist style of narration, by constantly interrupting Jeffrey's narration of his trips to the Convergence with flashbacks, repetitions, and intrusive images, as well as by including some sections in which the narrator's traumatized mind shifts from one idea to the next in a non-chronological order, DeLillo conveys the psychological damage Ross inflicts on his son with his deep faith in the Convergence's endeavor, firstly, and with his eventual decision to undergo cryopreservation, secondly. Furthermore, the author makes readers bear witness to the narrator's constant attempts at working through his trauma, which are ultimately frustrated by his father's decision to abandon him a second time, refusing to support him in his process of healing. Thanks to the autodiegetic narration, readers are able to empathize with Jeffrey—even if we may not be able to identify with him completely because of his troubled psychological condition.[20] Thus, we ultimately share his

[20] *Zero K* is a novel that places readers in a position of "empathic unsettlement." That is, it encourages readers to put themselves "in the other's position while recognizing the difference of that position and hence not taking the other's place" (LaCapra *Writing* 78). When discussing LaCapra's notion of emphatic unsettlement, Vickroy argues that narratives of trauma tend to undercut "any uncritical or sentimental

skepticism and his views on the disembodiment and dehumanization inherent in the idea of abandoning our present lives with the uncertain hope of being brought back to life in the future. In this respect, at some point while Ross is undergoing the cryopreservation procedures, Jeffrey narrates: "I was allowed a moment alone, which I spent staring into space, and then others came to prepare Ross for his long slow *sabbatical* in the capsule" (DeLillo *Zero K* 251; my emphasis). By using the word sabbatical to refer to his father's stasis period, the narrator criticizes his decision to turn to technology and leave behind his most intimate relationships, as well as his problems and responsibilities in this world—a moral stance which DeLillo seems to encourage readers to share in view of his narrative choices.

Rather than turning to life extension technologies as a way of leaving behind our problems and responsibilities—as Ross does to escape the feelings of emptiness derived from Artis's death and his responsibilities toward his traumatized son Jeffrey—*Zero K* argues for the need to learn to cope with our problems and responsibilities in the present and to accept illness and death as integral parts of being human, enjoying the present moment and establishing strong relationships with those around us. The last chapter of the novel is key in this respect. There, Jeffrey describes a bus ride across Manhattan upon his return from the Convergence, after Ross's cryopreservation. He recounts how he finds his place in the bus, "midway, looking nowhere in particular, mind blank or nearly so" and then notices "a glow, a tide of light." "Seconds later," Jeffrey narrates, "the streets were charged with the day's dying light and the bus seemed the carrier of this radiant moment." Suddenly, he hears "a human wail," which comes from a boy who, in spite of being "impaired in some way, macrocephalic, mentally deficient," is "on his feet, facing the rear window," uttering "howls of awe," "unceasing and exhilarating," and bouncing "slightly in accord with the cries" (DeLillo *Zero K* 273). Jeffrey puts an end to his narration with the following passage, which suggests that not even illness should lead human beings to turn to technology and cut their lives short in the hope of a better future. The passage stresses instead the existential need to enjoy the present moment and find the beauty of every situation, something that both Jeffrey and the boy manage to do, in spite of their own troubled physical or psychological conditions:

---

views" by presenting readers with characters "who are sympathetic but who problematically complicate their lives, behave unethically, and are unable to bond with others" (*Reading* 19).

> The full solar disk, bleeding into the streets, lighting up the towers to either side of us, and I told myself that the boy was not seeing the sky collapse upon us but was finding the purest astonishment in the intimate touch of earth and sun. I went back to my seat and faced forward. I didn't need heaven's light. I had the boy's cries of wonder. (274)

Furthermore, the fact that the novel ends with Jeffrey going back to his seat and facing forward suggests that he may someday be able to forget about the past and eventually work through his psychological trauma. Ross and Artis, by contrast, are doomed to remain forever trapped in their cryonic pods and, therefore, in the acting out stages of their traumas. In this respect, as some critics have argued, the novel ultimately conveys the idea that placing our hopes of immortality in technology can be delusional (see Kakutani). More specifically, by depicting the Convergence's patients as being trapped in their cryonic pods—and, therefore, stuck in the acting out stage of their traumas, unable to progress on to the working through stage—Jeffrey seems to question the idea that they will one day be reawakened to lead a life free from all past troubles. Thus, at some point during one of his visits to the cryonics pods, Jeffrey narrates: "There were rows of human bodies in gleaming pods. . . . There were lines, files, long columns of naked men and women in frozen suspension . . . Those were humans entrapped, enfeebled, individual lives stranded in some border region of a wishful future. Here there were no lives to think about or imagine" (DeLillo *Zero K* 256). The Convergence's patients, who turn to technology to escape their present problems, ultimately live in a constant frozen present, a constant acting out, as they are suspended waiting for a "wishful future" that may never come. Ironically enough, their cryopreserved bodies are as trapped as Jeffrey's traumatized mind, the only difference being that the latter still has a chance to work through his condition.

5. Conclusion

The possibility of enhancing human capabilities through technology is a subject that has not only captivated transhumanists and SF writers but also raised the interest of some well-known North-American authors who had hitherto remained largely outside the SF realm. This dissertation has analyzed Richard Powers's *Generosity: An Enhancement* (2009), Dave Eggers's *The Circle* (2013), and Don DeLillo's *Zero K* (2016) as representatives of a new trend of twenty-first century US fiction that directly engages with transhumanist philosophy and specific human enhancement technologies. Specifically, the previous three chapters have offered an analysis of these novels from the double perspective of transhumanism and critical posthumanism, two theoretical frameworks that explore, from different perspectives, what being human in the twenty-first century means. Ultimately, they have provided an overview of the narrative strategies used by the writers to convey the possibilities and shortcomings of different human enhancement technologies—biotechnology, social networks and surveillance devices, and cryonics. Exploring the narrative and stylistic intricacies of the novels was indeed one of the main aims of this project. Another aim of this dissertation was to explore the similar ways in which these writers approach the subject of human enhancement, in spite of using different narrative strategies. In this last respect, the initial hypothesis was that although Powers, Eggers, and DeLillo adopt balanced perspectives and explore both the opportunities opened up by, and the possible hazards of, different human enhancement technologies, they ultimately voice some critical posthumanist concerns. Specifically, their novels share in the critical posthumanist fear that the use of these technologies for enhancement purposes will bring about disembodiment and dehumanization. This concluding chapter brings together the results reached in each of the analytical chapters in order to examine the extent to which this initial hypothesis has been confirmed. At the same time, it explores what makes fiction a suitable tool to open a debate on some of the ethical and philosophical challenges posed by specific human enhancement technologies in the present century.

As discussed earlier, transhumanism is an intrinsically optimistic movement that aims to put technology to the service of overcoming human physical, intellectual, and

psychological limitations. In the last few decades, transhumanist philosophy has become better-known among the population and has even reached the political sphere, mainly through the activism of transhumanist philosopher and politician Zoltan Istvan. As already existing technologies are upgraded and new revolutionary technologies emerge, enhancement options that were once unlikely to exist are becoming increasingly feasible. Blinded by their optimism, the advocates of transhumanism often fail to consider the most nefarious consequences of these technologies. As the previous chapters have set out to prove, Powers, Eggers, and DeLillo give voice in their novels to transhumanist arguments on the appropriateness of using technology to improve the human species. Thus, they portray characters who embody transhumanist ideas and whose optimism regarding technology mirrors the optimism of a fast-growing sector of the population. In Powers's *Generosity*, readers are presented with a genomicist who, through his interventions in a science TV show, aims at convincing the population of the pertinence of increasing human happiness levels through biotechnology. The protagonist of Eggers's *The Circle*, who is in her mid-twenties and has just started working for one of the most important technology companies in the country, is mesmerized by each of the new applications for the digital technologies developed by her company. In turn, DeLillo's *Zero K* follows the lives of a rich couple who willingly cut their lives short, placing their fate (and their money) in the hands of a secluded cryonics company with the hope of being reawakened in a not too-distant future to enjoy eternal life.

As explained in the previous chapters, the language used by these characters, as well as by other characters who work for the above-mentioned technology companies, closely resembles the language used by some real-life advocates of transhumanism. Just like their non-fictional counterparts, these characters speak in favor of using technology to overcome human limitations and convey their absolute faith in the capability of technology to take human beings into the posthuman stage of evolution. They are certain that using technology for enhancement purposes is the proper thing to do, and keep their hopes that, sooner or later, society as a whole will embrace the possibilities opened up by new technological developments. Remarkably, these characters often metaphorically emphasize the need to move towards the posthuman stage of evolution by establishing a contrast between the present moment—which is referred to with terms alluding to past historical eras, such as 'the Dark Ages'—and the highly-technologized future they have long dreamt of—to which they refer by using terms such as 'the Second Enlightenment.'

Hence, at some point the fictional genomicist of Powers's *Generosity* expresses his belief that, in a not too-distant future, artificial chromosome pairs will be inserted along with human beings' regular set of chromosomes through germline genetic engineering. These chromosome pairs will put an end to human suffering. Then, the genomicist points to the urgency to direct research towards this goal so as to leave behind what he considers to be an archaic era: "The sooner we get there, the faster we can finally get medicine out of the dark ages" (Powers *Generosity* 178). Similarly, at some point in Eggers's *The Circle*, Eamon Bailey, one of the company's chief executives, introduces the workers of the company to SeeChange cameras. These revolutionary surveillance devices, which are to be placed all around the globe, will provide human beings with an unlimited access to information. According to Bailey, the time human beings are living through is similar to the "Middle Ages" and the "Dark Ages" in that "the vast majority of what we do and see and learn" is being lost. With SeeChange, the Circle aims to put an end to the era of not knowing, and start instead "the Second Enlightenment," an era in which human beings will not "allow the majority of human thought and action and achievement and learning to escape as if from a leaky bucket" (Eggers *The Circle* 68).

A similar metaphorical language can be observed in DeLillo's *Zero K*. Thus, upon his arrival to the Convergence, the protagonist visits the room in which his stepmother awaits to be cryopreserved. Artis tells his stepson about an eye surgery she underwent a decade before, after which she was able to appreciate the "brightness" and "radiance" of the world around her (DeLillo *Zero K* 44)—a metaphorical reference to the enhanced experience transhumanism seeks. At some point, Artis looks directly at him, and Jeffrey claims to see himself, for a moment, through her eyes: "She made me see myself, briefly, as the person who was standing here being looked at. Fairy tall man with thick webbed hair, prehistoric hair. This was all I could borrow from the deep probe maintained by the woman in the chair" (45). By making Jeffrey see himself through Artis's eyes, DeLillo skillfully conveys the protagonist's feelings of dislocation at his inability to understand his stepmother's decision to undergo cryopreservation. Furthermore, the fact that Jeffrey imagines Artis as thinking of his hair as "prehistoric" metaphorically points to the gap in these characters' attitude towards cryonics. Overall, by endowing their characters with a typically transhumanist metaphorical (and categorical) language, the three writers

ironically denounce the transhumanist belief that the use of technology for enhancement purposes will mark a before and after in the history of humankind.[1]

They use different narrative strategies that make readers distance themselves from the arguments put forward by the transhumanist characters—ironically endowing their characters with a metaphorical language that mirrors the language used by contemporary advocates of transhumanism is one of them. However, the three writers also make use of narrative strategies that may lead readers to recognize some of the positive applications of the technologies depicted in the novels. Thus, in *Generosity* Powers leads readers to consider the possibilities that biotechnology offers to put an end to human suffering mainly through the literary reproduction of Kurton's interventions in the *Over the Limit* show, and the public dialogue with a Nobel prize-winning novelist. In this respect, the fictional genomicist's argument that pre-implantation genetic diagnosis could be used to prevent children from inheriting specific genetic disorders is presented as particularly reasonable. Furthermore, once scientific studies have proved that some people are born with a genetic predisposition to depression, using technology to compensate for that difference, as Kurton suggests, may also seem most pertinent to readers.

In *The Circle*, by focalizing through its techno-utopian protagonist, as well as by using free indirect discourse and introducing the techno-utopian views of other workers of the company, Eggers leads us to ponder whether social media tools could build a more connected society by fostering human interaction and putting people with parallel interests and problems in contact. Otherwise, coming from different parts of the country or the globe, these people would probably have never met each other. Furthermore, *The Circle* suggests that social media tools could create a more egalitarian society by guaranteeing that everybody has access to the same experiences. Following this reasoning, posting pictures and videos of your holidays on social media, for example, would help those who for whatever reason have had to stay home by granting them virtual access to a variety of places and experiences. Placing surveillance devices all around the globe, so that everybody has real-time access to what is happening in every corner of the planet, would also help in this respect. Finally, *The Circle* also suggests that a more

[1] A similar metaphorical language can be traced in Zoltan Istvan's utopian novel *The Transhumanist Wager* (2013). Thus, at some point the protagonist of the novel Jethro Knights threatens to send his detractors "back into the Dark Ages" and to "shut down the world, . . . halt its economies, its governments, its abilities to enforce laws" if they prevent his sovereign nation, Transhumania, from reaching its transhumanist goals (235).

democratic society could be achieved using social media tools and surveillance devices. On the one hand, governments could ensure full participation in the general elections by making it compulsory for citizens to vote through their social media profiles. On the other hand, people could prevent their elected leaders from getting involved in illegal practices by monitoring all their movements through surveillance cameras.

Lastly, in *Zero K* DeLillo leads us to consider, from the perspective of billionaire Ross Lockhart, who is ultimately unable to live without his wife Artis, the possibility of undergoing cryopreservation with the hope that, in a not too-distant future, we will be reawakened to live forever and eternally enjoy the company of our loved ones. The workers of the Convergence also play a key role in this respect, as they invest great efforts in convincing their patients—and, by extension, the reader—that in a world saturated with man-made natural disasters, terrorism, and war, cryonics could be indeed a safe bet. Given that human beings are never ready to say goodbye to the people we love and that the fear of death is a recurrent feeling among a growing sector of the population in an increasingly secular and catastrophe-ridden society, the transhumanist ideal of using technology to overcome death may seem particularly appealing. However, perhaps the most enlightening moment is when, from Jeffrey's perspective, readers are led to recognize the possibilities that cryonics could open up for people who have been born with a disabling illness, such as the young boy the protagonist meets at the corridors of the Convergence, who suffers from some kind of cerebral palsy.

All the above-mentioned enhancement technologies and options may seem, at first, reasonable and even appealing. However, when we delve deeper into their implications for human life, it soon becomes evident that they may also have their drawbacks. Regrettably, just as happens with the optimistic characters of the novels that form the corpus of this dissertation, contemporary advocates of transhumanism often fail to see the negative implications of the latest technological developments. Unfortunately, this lack of concern is shared by a population that is increasingly enthralled by, and uncritical of, the new technological developments and the possibilities they offer. This is something of which Powers, Eggers, and DeLillo seem to be well aware, as evidenced by the fact that some of their latest novels are ultimately warnings against the unrestrained and unquestioned technological enhancement of the human condition. As this dissertation has set out to prove, the true value of their novels lies, precisely, in the fact that they force

us to confront both emotionally and intellectually the most nefarious consequences that specific human enhancement technologies may bring about.

Therefore, although the three writers give voice to transhumanist arguments on the pertinence of enhancing the human condition, readers may ultimately find it difficult to identify with these arguments. This is mainly due to the fact that other narrative strategies are introduced that denounce the decorporealization and dehumanization that the use of specific human enhancement technologies—biotechnology, social media tools and surveillance devices, and cryonics, in particular—may bring about. Specifically, the writers warn that the use of these technologies for enhancement purposes may prevent human beings from living in—and enjoying—the present moment, lead them to disregard their more intimate relationships, and exempt them from confronting their present troubles and obligations. In this sense, the three novels that form the corpus of my dissertation share the critical posthumanist vision of the posthuman as an embodied being. As explained in previous chapters, critical posthumanists agree that we are now in a position to redefine what it means to be human. As opposed to those who regard this particular historical moment as a chance to leave the meat behind, they suggest that embodiment should feature prominently in this new definition (Hayles *How We Became* 5; Herbrechter 95-96; Vint 25). Indeed, against transhumanist fantasies of disembodiment, the three novels underscore the importance of living in the here and now, of establishing strong relationships with the people around us, and of being resilient in the face of our present troubles and obligations.

Thus, in *Generosity*, Powers introduces two parallel narrative strands that interweave until they eventually converge in part three of the novel. In one of these narrative strands, through an omniscient narration, Powers presents his readers with Thomas Kurton's transhumanist views on the appropriateness of using biotechnology to create a happier population. Nevertheless, if readers are not able to identify with the fictional genomicist's transhumanist discourse it is mainly because Powers introduces in the other narrative strand, the one that revolves around Thassa and Russel, some narrative strategies which are typical of metafiction. Writers have used this narrative mode to problematize the distinction between fiction and reality and draw our attention to the fictional character of the world that surrounds us. Accordingly, the narrative strategies used by Powers ultimately draw readers' attention to the constructed character of Kurton's transhumanist view of happiness as an engineering problem and, by extension,

to the constructed character of the transhumanist narrative put forward by the contemporary advocates of transhumanism. Specifically, Powers introduces in the sections dealing with Russell and Thassa an alleged heterodiegetic narration with explicit intrusions from the extradiegetic narrator, who eventually proves to be Russell Stone himself. Hence, the self-conscious narrator comments both on the contents of the diegesis and on its process of construction and narration, at times acknowledging, at times denying, his role as the imaginative invention behind the story, and sometimes even questioning its truthfulness. Russell's self-reflexive and non-totalizing narration indirectly draws our attention to the omniscient and unwavering narration in Kurton's narrative strand. Thus, we may realize that Kurton's transhumanist narrative on the inheritability of happiness and the appropriateness of using technology to create a happier population is, like the novel Russell is writing, nothing but a construction.

Another way in which Powers awakens readers to the constructed character of the transhumanist narrative is by explicitly addressing readers and pointing to our ability to anticipate how the story is going to develop once Thassa has fallen prey to the transhumanists. The use of this strategy is key insofar as it calls our attention to the fact that transhumanists, with their narrative of unhindered and inevitable technological progress, ultimately aim to drag the population into the future they have long been wishing for. In other words, by means of explicitly addressing the reader using the second-person pronoun "you" and pointing to our ability to predict how Thassa's story is going to end, Powers denounces that the transhumanist discourse of inevitable and unrestrained (bio)technological growth is nothing but a construction. Accordingly, he invites us to turn a cold shoulder on those who aim to shape the future of humanity, very often without thinking about the costs of the technologies they worship. Therefore, readers may realize that it is not necessarily a matter of time that biotechnology is put to the service of increasing human happiness levels. On the contrary, as some critics have argued, human beings are still in time to halt the development of these technologies or to draw red lines that should never be crossed (McKibben x; Fukuyama *Our Posthuman* 208).

Finally, against those who regard happiness as an engineering problem, Powers puts forward his own view of happiness as the result of showing the right disposition and attitude towards life. He does so by means of providing his readers with two alternative, mutually exclusive endings for Thassa's story and seeming to affirm the validity of just

one of them, the one in which Thassa takes her own life at the motel room. With this narrative choice, Powers suggests that genetics is by no means the only determining factor in the happiness equation: no matter the protagonist is genetically predisposed to experiencing happiness, she ends up committing suicide because of the pressure to which she has been subjected. According to the ultimate implications of the novel, happiness is rather a state of mind human beings actively need to fight for, just as Thassa does on a daily basis. In spite of having lived through different traumatic events throughout her life, this character is able to think positive, to build solid relationships with those around her, and to appreciate the small things that make life worth living. Overall, echoing some of the main tenets of critical posthumanism, Powers ultimately directs readers back to the present moment and condemns the transhumanist urge to turn to technology to find eternal contentment.

In *The Circle*, Eggers conveys a similar message. To this purpose, he plays with the effects of focalization and free indirect discourse, first raising and then shattering the reader's expectations regarding the technologies developed by the technology company that gives the novel its name. Thus, the writer introduces a heterodiegetic narrator who, focalizing through the techno-utopian protagonist and making use of free indirect discourse, first makes readers aware of some of the revolutionary applications of the Circle's social media tools and surveillance devices. However, the same narrative techniques are then used by Eggers to create ironic distance from the protagonist and to convey her occasional doubts regarding these technologies and their applications. Although Mae's doubts are only temporary, they provide hints of different ways in which the Circle's technologies may dehumanize human beings and promote disembodied experiences. Thus, the protagonist feels at times overwhelmed by the large volume of information she has to deal with in the customer experience department. Being in command of six different screens, which feature thousands of messages from customers, co-workers, and friends, Mae feels exhausted at the end of the day and even finds it difficult to fall asleep, as she confesses to her lover and co-worker Francis Garaventa, who claims to have the same problem.

Furthermore, Mae shows herself hesitant regarding "LuvLuv" (Eggers *The Circle* 120), a dating app developed by the Circle which scans the web so as to provide their users with personal information about the people they are dating. As explained earlier, not only does Mae feel that the app reduces their users' complexities to a few traits, but

she also feels that it is unnecessary as all that information could be easily obtained through normal conversation. Additionally, at some point the protagonist enters the company's medical center and is disappointed to find that all the people who are inside are immersed in their technological devices. Not knowing whom to approach, Mae laments not being greeted in a more traditional way. Only her kayaking trips seem to offer a relief for the protagonist, allowing her to get away from the Circle's technological turmoil and to enjoy instead the present moment.

As well as through focalization and free indirect discourse, Eggers further leads readers to distance themselves from the Circle's technologies and policies by introducing some voices of dissent, as well as by making use of an ironic heterodiegetic narrator, and of some mottos and symbols. As happened with focalization and free indirect discourse, these strategies are all aimed at making readers aware of how the technologies portrayed in the novel may threaten human freedom and privacy and lead human beings to willingly alienate themselves from the physical world in favor of virtuality. In this last respect, both Mae's parents and her ex-boyfriend Mercer Medeiros express their distress at Mae being more worried about posting things on her social media profile and interacting with her online followers than on enjoying their company. Similarly, Mercer regrets not being able to talk to Mae directly anymore, but rather only through a screen, and blames her for not realizing that interacting with strangers through a screen is never a substitute for the real offscreen experience. Because they are all characters we are supposed to like, we may find it easy to identify with their warnings and ultimately distance ourselves from Mae's behavior and the transhumanist values she endorses.

Correspondingly, Eggers's ironic heterodiegetic narrator turns a cold shoulder on those characters who are utterly dependent on the Circle's technologies. Thus, the ironic narrator shows characters who feel incomplete when they are away from their technological gadgets, and who are more interested in sharing everything they do and think online than in enjoying the here and now. These characters paradoxically believe that if something is not online it never happened, and their ultimate aim is to win the approval and recognition of their online followers. Very often, they neglect their closest relationships in the physical world, and address problems that require a more humane solution through social media. Remarkably, readers may find it easy to identify with much of this behavior. Just as happens in the society depicted in *The Circle*, in the developed world human interactions are increasingly channeled through social media. As a result,

human beings gradually alienate themselves from the present moment and from the people around them and lead instead virtual lives in cyberspace. Against the disembodiment fostered by contemporary information and communication technologies, Eggers's novel also stresses the need to live in, and to enjoy, the present moment, and to build strong relationships with those around us.

Finally, as well as calling our attention to the disembodiment fostered by the Circle's technologies, through the introduction of some voices of dissent and the ironic commentary of the heterodiegetic narrator, as well as by means of introducing some mottos and symbols, Eggers denounces the loss of freedom and privacy that these technologies—and the policies that derive from them—could eventually bring about. Specifically, the writer denounces that, should these technologies be put to revolutionary new uses, the company could turn into a totalitarian monopoly. Thus, it could end up controlling all the flow of information and, therefore, the population, and depriving human beings from both their privacy and the freedom to opt out. These are indeed risks that human beings could face in a not too-distant future and, accordingly, that we should be wary of.

Lastly, by making use of a series of strategies which are typical of the narratives of trauma, DeLillo manages to convey in *Zero K* the psychological damage that Ross Lockhart inflicts on his son Jeffrey, firstly with his profound faith in the Convergence's endeavor, and secondly, with his decision to undergo premature cryopreservation. Jeffrey, who was abandoned by his father when he was thirteen, reenacts his childhood trauma as soon as he sets foot on the Convergence, the secluded cryonics facility where his father's dying wife awaits to be cryopreserved. At the impossibility of understanding his stepmother's decision, the autodiegetic narrator's mind starts going back to the moment when his father abandoned him and his mother. Furthermore, he is revisited by several other traumatic memories, all of them stemming from that primal traumatic event. Jeffrey's psychological condition worsens when he realizes that his father could be considering the possibility to join his beloved Artis and undergo cryopreservation too, therefore abandoning him one second time. As is often the case with trauma narratives, the novel formally mirrors the narrator's troubled mental condition. Thus, Jeffrey's narration of his stay at the Convergence is constantly interrupted by a series of flashbacks, repetitions, intrusive images, and clusters of intrusive obsessive thoughts. This results in a highly fragmented narrative that cunningly mirrors the protagonist's psychological

fragmentation. In this last respect, DeLillo's choice of a minimalist style of narration also adds to our sense of emotional and psychological breakdown.

Additionally, DeLillo makes readers bear witness to Jeffrey's persistent efforts to work through his trauma, which are ultimately frustrated by Ross's announcement of his decision to join Artis and undergo premature cryopreservation. Since through the autodiegetic narration we are invited to empathize with Jeffrey, we may realize how much pain his father inflicts on him with his decision to abandon him one second time. Therefore, we may regard with contempt Ross's decision to give up the time he has left in this world for the uncertain hope that he will be reawakened in a not too-distant future to enjoy eternal life—a future in which, nevertheless, his son will not be. Most importantly, we may blame him for refusing to compensate for the psychological damage he has caused on his son and to support him on his process of healing. Overall, all the narrative techniques introduced by DeLillo are aimed at evoking intense emotional responses on the part of the reader. By involving us emotionally, the writer ultimately incites us to reflect on some of the ethical issues that could arise should human beings be given the possibility to use technology to cut their lives short in the hope of a better future. As happened with *Generosity* and *The Circle*, against those who turn to technology for improvement, in *Zero K* DeLillo makes a case for learning to live in, and to enjoy, the present moment, facing illness and death as integral parts of being human, learning to live with our problems and responsibilities, and taking care of our personal relationships. As explained earlier, DeLillo's philosophy on how to live in the world is perhaps best exemplified by his depiction, in the last chapter of the novel, of a disabled character who in spite of suffering from a disabling mental disorder is still able to appreciate the beauty of the New York sunset.

The analysis of the novels confirms, therefore, the initial hypothesis: the three writers approach the subject of the technological enhancement of the human condition from a variety of perspectives and using different narrative strategies but they ultimately share in the critical posthumanist fear that the use of technology for enhancement purposes will bring about disembodiment and dehumanization. Rather than turning to technology to overcome our human limitations, they all stress the need to acknowledge these limitations, to face the problems that may come up in our lives with resilience, and to make the most of the time we have on earth The three analytical chapters also prove that, with its ability to give voice to, and contrast different discourses and perspectives,

as well as to engage readers emotionally and intellectually, fiction is indeed a suitable tool to make readers reflect on some of the ethical and philosophical questions that surround the transhumanist ideal of using technology to enhance the human condition. As mentioned above, these are aspects that are often overlooked not only by the advocates of transhumanism and the companies that develop and commercialize the different technologies, but also by a population that, in general, has been so far increasingly confident in the ability of technology to improve their living standards.

Regrettably, governments are not devoting a great deal of effort to establishing regulations on the use of these technologies. In fact, the rate at which new technologies develop surpasses by far the rate at which regulations and policies are formulated and implemented. Given the fast pace of technological development, many critics have suggested that *now* is the time for us to decide where we want our technologies to take us. Thus, in his work *Shaping the Fourth Industrial Revolution* (2018), the economist and founder of the World Economic Forum Klaus Schwab argues that the technologies of what he calls "the Fourth Industrial Revolution" are "transforming society and reshaping our future." That is why Schwab believes that human beings are now more than ever in need of more clearly articulated "ethical frameworks, normative standards, and values-based governances" to serve as guidelines "in the development and use of these powerful tools in society" (47). Nevertheless, as Yuval Noah Harari points out in his work *21st Lessons for the 21st Century* (2018), technological disruption is still not a leading item on the agenda of political parties around the world. For their part, scientists, engineers, and entrepreneurs who are promoting the infotech and biotech revolutions are often unaware of the political implications of the decisions they are making (8). In the novels analyzed in this dissertation, Powers, Eggers, and DeLillo seem to fill in this gap. Because they illustrate the need to be wary against, and regulate, the new technological developments and their revolutionary applications, *Generosity*, *The Circle*, and *Zero K* have a clearly political dimension. Against the discourses put forward by those critics who present the coming transhuman era as something inevitable and stress the urgency of turning to technology to overcome our human limitations, the three novels convey the idea that human beings still have time to decide where we want our technologies to take us.

As noted earlier in this dissertation, because *Generosity*, *The Circle*, and *Zero K* focus on how technology may propitiate the loss of some human attribute rather than on how the very definition of the human has changed in recent times, they leave out

important aspects of the critical posthumanist paradigm. In particular, the opportunities it offers to challenge gender, race, and class stereotypes and to transcend anthropocentrism.[2] As also hinted at earlier, the fact that Powers, Eggers, and DeLillo are all male, white, middle-class authors and, therefore, may have never felt excluded from the liberal humanist paradigm, may help explain this bias. Yet, as this dissertation has set out to prove, *Generosity*, *The Circle*, and *Zero K* provide valuable insights on the different ways in which human enhancement technologies may dehumanize human beings and promote disembodied experiences. Remarkably, in spite of conveying a similar message, the novels do not share a similar aesthetics. On the contrary, the writers approach the subject from different perspectives and using a variety of narrative styles and techniques—from metafiction to social satire and to aesthetic characteristics of the narratives of trauma. This ultimately evidences that fiction, in any of its plural manifestations, is indeed a suitable tool to help us assess critically both the possibilities opened up by and, most importantly, the most nefarious aspects of human enhancement technologies so that we can pave our way to a better future, a future in which we are more, rather than less human.

[2] Nevertheless, in his latest novel to date, *The Overstory* (2018), Powers does embrace the opportunities that the critical posthumanist framework opens up to transcend anthropocentrism. The plot revolves around the lives of nine human characters who are joined in their shared awareness of the need to protect some giant Californian redwood trees "against profit-driven industrial aggression, or sheer administrative carelessness" (Gaudot). By depicting the trees as possessing agency and intentionality of their own, the novel blurs the boundary existing between the human and the nonhuman realms, removing "the ontological and epistemological superiority of one over the other" (Austin 81). Thus, it presents a new cosmology, one which Patrycja Austin describes as a cosmology "of relations rather than hierarchies." Ultimately, the novel poses "questions about the ethical and political rights of the nonhuman world" (87).

Works Cited

"About Cryonics." KrioRus, www.kriorus.ru/en/about-cryonics. Accessed 5 Aug. 2020.

"About PPI." *Positive Psychology Institute*, www.positivepsychologyinstitute.com.au/about-ppi. Accessed 7 Aug. 2020.

Ahmed, Sara. The Promise of Happiness. Duke UP, 2010.

"Alcor Membership Statistics." *Alcor Life Extension Foundation*, alcor.org/AboutAlcor/membershipstats.html. Accessed 5 Aug. 2020.

Alighieri, Dante. *The Divine Comedy*. 1472. Translated by Henry F. Cary, Harvard Classics Part 20, Kessinger Pub. Co, 2004.

Angelo, Megan. *Followers*. HQ, 2020.

Arnold, Matthew. "From the Hymn of Empedocles." *The Oxford Book of Victorian Verse*. Oxford, 1912, pp. 389-90.

Ashman, Nathan. "Death Itself Shall Be Deathless": Transrationalism and Eternal Death in Don DeLillo's *Zero K*." *Critique: Studies in Contemporary Fiction*, vol. 60, no. 3, 2019, pp. 1-11, doi:10.1080/00111619.2018.1553845.

Atwood, Margaret. "When Privacy Is Theft." *The New York Review of Books*, 21 Nov. 2013, www.nybooks.com/articles/2013/11/21/eggers-circle-when-privacy-is-theft/. Accessed 3 Aug. 2020.

---. *Writing with Intent: Essays, Reviews, Personal Prose: 1983-2005*. Carroll & Graf, 2005.

Austin, Patrycja. "A Rustling in *The Overstory*: More-Than-Human Storytelling in Richard Powers's Novel." *Sensus Historiae*, vol. 38, no. 1, 2020, pp. 77-88.

Baelo-Allué, Sonia. "9/11 and the Psychic Trauma Novel: Don DeLillo's *Falling Man.*" *ATLANTIS: Journal of the Spanish Association of Anglo-American Studies*, vol 34, no. 1, 2012, pp. 63-79.

Bailey, Ronald. Liberation Biology: The Scientific and Moral Case for the Biotech Revolution. Prometheus Books, 2005.

---. "Rage against the Machines: Witnessing the Birth of the Neo-Luddite Movement." *Reason*, 1 Jul 2001, reason.com/2001/07/01/rage-against-the-machines-2/. Accessed 5 Aug. 2020.

Banks. Iain M. *Consider Phlebas*. Bantam Books, 1987.

---. *The Player of Games*. Orbit, 1988.

---. *Use of Weapons*. Bantam Books, 1990.

Barlow, John Perry. "A Cyberspace Independence Declaration." *Electronic Frontier Foundation*, 8 Feb. 1996, www.eff.org/cyberspace-independence. Accessed 3 Aug. 2020.

Barth, John. "The Literature of Exhaustion." 1967. *The Friday Book: Essays and Other Non-Fiction*. The John Hopkins UP, 1984, pp. 62-76.

Bayefsky, Michelle. *"Who Should Regulate Preimplantation Genetic Diagnosis in the United States?" AMA Journal of Ethics,* vol. 20, no. 12, 2018, pp.1160-67, doi:10.1001/amajethics.2018.1160.

Bentham, Jeremy. *Panopticon, or the Inspection House*. Thomas Byrne, 1793.

Berger, Peter L., and Thomas Luckman. *The Social Construction of Reality*. Harmondsworth, 1971.

Birkerts, Sven. *The Gutenberg Elegies.* Fawcett Columbine, 1994.

Black Mirror. Created by Charlie Brooker, Zeppotron / House of Tomorrow, 2011-2019.

Bloom, Sandra L. "Bridging the Black Hole of Trauma: The Evolutionary Significance of the Arts." *Psychotherapy and Politics International*, vol. 8, no. 3, 2010, pp. 198-212, doi:10.1002/ppi.223.

Booker, M. Keith. *The Dystopian Impulse in Modern Literature: Fiction as Social Criticism*. Greenwood Press, 1994.

Booth, Wayne C. *The Rhetoric of Irony.* U of Chicago P, 1974.

Bostrom, Nick. "The Fable of the Dragon-Tyrant." *Journal of Medical Ethics*, vol. 31, no. 5, 2005, pp. 273-77.

---. "In Defense of Posthuman Dignity." Hansell and Grassie, pp. 55-66.

---. "Human Genetic Enhancements: A Transhumanist Perspective," *Journal of Value Inquiry*, vol. 37, no. 4, 2003, pp. 493-506. Springer Link, doi:10.1023/B:INQU.0000019037.67783.d5.

---. "The Transhumanist FAQ: A General Introduction." World Transhumanist Association, 2003, www.nickbostrom.com/views/transhumanist.pdf. Accessed 7 Aug. 2020.

---. "Transhumanist Values." *Journal of Philosophical Research*, vol. 30, 2005, pp. 3-14.

Bostrom, Nick, et al. "Transhumanist Declaration (2012)." More and Vita-More, pp. 54-55.

Braidotti, Rosi. *The Posthuman*. Polity Press, 2013.

---. "Posthuman, All Too Human: Towards a New Process Ontology." *Theory, Culture & Society*, vol. 36, no. 7-8, 2006, pp. 197-208, doi:10.1177/0263276406069232.

---. *Posthuman Knowledge*. Polity Press, 2019.

Breuer, Josef, and Sigmund Freud. *Studies on Hysteria.* 1895. Translated by James Strachey, Basic Books, 2000.

Brooks, Kevin. "Dave Eggers's *What Is the What* as World Literature." *World Literature Today*, vol 84, no. 2, 2010, pp. 36-40.

Brown, Laura S. "Not Outside the Range: One Feminist Perspective on Psychic Trauma." Caruth, pp. 100-12.

Brown, Wendy. *Undoing the Demos: Neoliberalism's Stealth Revolution*. Zone Books, 2015.

"Building Your Resilience." *American Psychological Association*, 1 Feb. 2020, www.apa.org/topics/resilience. Accessed 7 Aug. 2020.

Burn, Stephen J. "An Interview with Richard Powers." *Contemporary Literature*, vol. 49, no. 2, 2008, pp. 163-79.

Butler, Octavia. *Xenogenesis*. Guild, 1989.

Calvo-Pascual, Mónica. "'The New Children of the Earth': Posthuman Dystopia or a Lesbian's Dream in Larissa Lai's *Salt Fish Girl*." *Orbis Litterarum*, vol. 73, no. 5, 2018, pp. 405-17, doi.org/10.1111/oli.12190.

Carrasco, Rocío. "(Re)defining the Gendered Body in Cyberspace: The Virtual Reality Film." *Nordic Journal of Feminist and Gender Research*, vol. 22, no. 1, 2014, pp. 33-47, 10.1080/08038740.2013.866597.

Caruth, Cathy. Introduction. Caruth, pp. 3-12.

---, editor. *Trauma: Explorations in Memory*. Johns Hopkins UP, 1995.

Castells, Manuel. 2010. *The Rise of the Network Society.* Second Edition with a New Preface, Wiley-Blackwell, 2010.

Cavallaro, Dani. *Cyberpunk and Cyberculture: Science Fiction and the Work of William Gibson*. The Athlone Press, 2000.

Cerullo, Michael A. "The Ethics of Exponential Life Extension through Brain Preservation." *Journal of Evolution and Technology*, vol. 26, no. 1, 2016, pp. 94-105.

Charles, Ron. "'The Overstory' by Richard Powers Wins Pulitzer Prize for Fiction." *The Washington Post*, 15 Apr. 2019, www.washingtonpost.com/entertainment/books/the-overstory-by-richard-powers-wins-pulitzer-prize-for-fiction/2019/04/15/b7701b28-5fa9-11e9-bfad-36a7eb36cb60_story.html. Accessed 7 Aug. 2020.

Chiang, Ted. *The Lifecycle of Software Objects*. Subterranean Press, 2010.

---. "Liking What You See: A Documentary." *Stories of Your Life and Others*, Tor Books, 2002, pp. 237-74.

The Circle. Directed by James Pondsolt, Image Nation Abu Dhabi, 2017.

Ciuraru, Carmela. "*A Hologram for the King*, by Dave Eggers." *SFGate*, 14 Aug. 2012, www.sfgate.com/books/article/A-Hologram-for-the-King-by-Dave-Eggers-3656989.php. Accessed 3 Aug. 2020.

Clarke, Bruce, and Manuela Rossini. *The Cambridge Companion to Literature and the Posthuman*. Cambridge UP, 2017.

Cline, Ernest. *Ready Player One*. Broadway Books, 2011.

Cofer, Erik. "Owning the End of the World: *Zero K* and DeLillo's Post-Postmodern Mutation." *Critique: Studies in Contemporary Fiction*, vol. 59, no. 4, 2018, pp. 1-12, doi:10.1080/00111619.2017.1412936.

Coleman, Philip and Steve Gronert Ellerhoff, editors. *George Saunders: Critical Essays*. Palgrave McMillan, 2017.

Collado-Rodríguez, Francisco. "Textual Unreliability, Trauma and the Fantastic in Chuck Palahniuk's *Lullaby*." *Studies in the Novel*, vol. 45, no. 4, 2013, pp. 620-37.

---. "Trauma and Storytelling in Cormac McCarthy's *No Country for Old Men* and *The Road*." *Papers on Language & Literature*, vol. 48, no. 1, 2012, pp. 45-69.

Cowart, David. "Prolonged Periodization: American Fiction After 1960." *The Cambridge Companion to Postmodern American Fiction*, edited by Paula Geyh, Cambridge UP, 2017, pp. 28-46.

Craps, Stef. *Trauma and Ethics in the Novels of Graham Swift.* Sussex Academic Press, 2005.

Craps, Stef, and Sean Bex. "An Interview with Dave Eggers and Mimi Lok." *Contemporary Literature*, vol. 56, no. 4, 2015, pp. 544-67.

Crutzen, Paul J. "Geology of Mankind." *Nature*, vol. 415, no. 1, 2002, pp. 23.

Cuthbertson, Anthony. "Donald Trump Faces Presidential Challenge from Transhumanist Cyborg." *Independent*, 20 Nov. 2019, www.independent.co.uk/life-style/gadgets-and-tech/news/us-elections-2020-zoltan-istvan-trump-republican-nomination-a9210681.html. Accessed 5 Aug. 2020.

Deleuze, Gilles. "Postscript on the Societies of Control." *October*, vol. 59, 1992, pp. 3-7.

DeLillo, Don. *Americana.* Houghton Mifflin, 1971.

---. *The Body Artist*. Scribner, 2002.

---. *Falling Man*. Picador, 2007.

---. *Underworld*. Scribner, 1997.

---. *White Noise*. Penguin Books, 1985.

---. *Zero K*. Picador, 2016.

Dewey, Joseph. *Understanding Richard Powers*. U of South Carolina P, 2002.

Dick, Philip K. *Do Androids Dream of Electric Sheep?* Doubleday, 1968.

Dini, Rachele. "Don DeLillo, *Zero K*." *European Journal of American Studies*, Reviews vol. 2, 2016, journals.openedition.org/ejas/11393. Accessed 5 Aug. 2020.

DiSalvo, David. "Massive Study Finds Genetic Links to Happiness and Depression." *Forbes*, 22 Apr. 2016, www.forbes.com/sites/daviddisalvo/2016/04/22/massive-study-finds-genetic-links-to-happiness-and-depression/#79d937fa3e1b. Accessed 7 Aug. 2020.

Doctorow, Cory. *Down and Out in the Magic Kingdom*. Tor Books, 2003.

Docx, Edward. "*The Circle* by Dave Eggers – Review." *The Guardian,* 9 Oct. 2013, www.theguardian.com/books/2013/oct/09/circle-dave-eggers-review. Accessed 3 Aug. 2020.

Domestico, Anthony. "Pointless Counterpoint." *Commonweal Magazine*, 19 Oct. 2009, www.commonwealmagazine.org/pointless-counterpoint. Accessed 7 Aug. 2020.

D'Souza, Clyde. *Memories with Maya*. 2013.

Dunbar, Robin. "You've Got to Have (150) Friends." *The New York Times*, 25 Dec. 2010, www.nytimes.com/2010/12/26/opinion/26dunbar.html. Accessed 3 Aug. 2020.

Duvall, John N. "The power of history and the persistence of mystery." Introduction. *The Cambridge Companion to Don DeLillo*, edited by John N. Duvall. Cambridge UP, 2008, pp. 1-10.

Eaton, Mark. "Inventing Hope: The Question of Belief in Don DeLillo's Novels." *The Gift of Story*, edited by Emily Griesinger and Mark Eaton. Baylor UP, 2006, pp. 31-50.

Ebbesen, Mette and Thomas G. Jensen. “Nanomedicine: Techniques, Potentials, and Ethical Implications.” *Journal of Biomedicine and Biotechnology*, vol. 1, no. 1, 2006, pp. 1-11. Hindawi, doi:10.1155/JBB/2006/51516.

Egan, Greg. *Diaspora*. Orion Publishing Group, 1997.

---. *Permutation City*. Orion Publishing Group, 1994.

Egan, Jennifer. *Look at Me*. 2001. Picador, 2002.

Eggers, Dave. *The Circle.* Vintage Books, 2013.

---. *A Heartbreaking Work of Staggering Genius*. Simon and Schuster, 2000.

---. *A Hologram for the King*. McSweeney's, 2012.

---. *What is the What*. McSweeney's, 2006.

---. *Zeitoun*. McSweeney's, 2009.

Eliot, T.S. *The Cocktail Party.* Faber & Faber, 1935.

Ellul, Jacques. *The Technological Society*. 1954. Translated by John Wilkinson, Introduction by Robert K. Merton, Vintage Books, 1967.

“Episode 6.” *Years and Years*, created by Russell T. Davis, season 1, episode 6, Red Production Company, 2019.

Erikson, Kai. “Notes on Trauma and Community.” Caruth, pp. 183-99.

Esteve, Mary. “The Idea of Happiness: Back to the Postwar Future.” *Postmodern, Postwar, and After: Rethinking American Literature*, edited by Jason Gladstone, Andrew Hoberek, and Daniel Worden. U of Iowa P, 2016, pp. 127-40.

Ettinger, Robert. *The Prospect of Immortality*. 1962. www.cryonics.org/images/uploads/misc/Prospect_Book.pdf. Accessed 5 Aug. 2020.

Ex Machina. Directed by Alex Garland, Film4 / DNA Films, 2015.

Ferrández San Miguel, María. “Towards a Theoretical Approach to the Literature of Resilience: E. L. Doctorow’s Ragtime as a Case Study.” *Orbis Litterarum*, vol. 73, no. 2, 2018, pp. 146-69, doi: 10.1111/oli.12162.

Ferrando, Francesca. “Posthumanism, Transhumanism, Antihumanism, Metahumanism, and New Materialisms: Differences and Relations.” *Existenz*, vol. 8, no. 2, 2013, pp. 26-32.

Ferris, Joshua. “Joshua Ferris Reviews Don DeLillo’s ‘Zero K.’” *The New York Times*, 2 May 2016, www.nytimes.com/2016/05/08/books/review/don-delillos-zero-k.html. Accessed 5 Aug. 2020.

Finfer, Daniel. “Replacing You.” *To Build a Fire*, 2009, posthumanera.bandcamp.com/album/to-build-a-fire. Accessed 5 Aug. 2020.

---. “You in the Future.” *To Build a Fire*, 2009, posthumanera.bandcamp.com/album/to-build-a-fire. Accessed 5 Aug. 2020.

Foucault, Michel. *Discipline and Punish*: *The Birth of the Prison.* 1975. Translated by Alan Sheridan, Vintage Books, 1995.

Franzen, Jonathan. *Purity*. Farrar, Straus and Giroux, 2015.

Frati, Paola, et al. "Smart Drugs and Synthetic Androgens for Cognitive and Physical Enhancement: Revolving Doors of Cosmetic Neurology." *Current Neuropharmacology*, vol. 13, 2015, pp. 5-11, doi:10.2174/1570159X13666141210221750.

"Frequently Asked Questions." *Alcor Life Extension Foundation*, alcor.org/FAQs/index.html. Accessed 5 Aug. 2020.

Freud, Sigmund. "Remembering, Repeating and Working-Through." *The Standard Edition of the Complete Psychological Works of Sigmund Freud*. Vol. 12. Translated by James Strachey. Hogarth Press, 1953-1974, pp. 147-56.

Fukuyama, Francis. *Our Posthuman Future: Consequences of the Biotechnology Revolution*. Farrar, Straus and Giroux, 2002.

---. "Transhumanism." *Foreign Policy*, 23 Sept. 2009, foreignpolicy.com/2009/10/23/transhumanism/. Accessed 7 Aug. 2020.

Funk, Wolfgang. "The Quest for Authenticity: Dave Eggers's *A Heartbreaking Work of Staggering Genious* between Fiction and Reality." *The Metareferencial Turn in Contemporary Arts and Media: Forms, Functions, Attempts at Explanation*, edited by Werner Wolf, Rodopi, 2011, pp. 125-44.

Galow, Timothy W. *Understanding Dave Eggers.* U of South Carolina P, 2014.

Gass, William H. "Philosophy and the Form of Fiction." *Fiction and the Figures of Life***.** 1970. David R. Godine, Publisher, 2007.

Gaudot, Edouard. Review of *The Overstory* by Richard Powers." *Green European Journal*, www.greeneuropeanjournal.eu/threads-of-political-ecology-a-review/. Accessed 17 Aug. 2020.

Genette, Gérard. *Narrative Discourse*. Translated by Jane E. Lewin. Cornell UP, 1980.

Ghost in the Shell. Directed by Mamoru Oshii, Production I.G. / Bandai Visual / Manga Entertainment, 1995.

Ghost in the Shell. Directed by Rupert Sanders, DreamWorks Pictures, 2017.

Gibson, William. "Johnny Mnemonic." 1981. *Burning Chrome*, Harper Voyager, 2003.

---. *Neuromancer*. ACE Books, 1984.

Glavanakova, Alexandra K. "The Age of Humans Meets Posthumanism: Reflections on Don DeLillo's *Zero K*." *Studies in the Literary Imagination,* vol. 50, no. 1, 2017, pp. 91-109.

Glynn, Alan. *Limitless*. Little, Brown and Company, 2001.

Grey, Aubrey de. "Aubrey de Grey: Treating Ageing as a Curable Disease." *BBC News*. 19 Mar. 2018, www.bbc.com/news/av/technology-43402894/aubrey-de-grey-treating-ageing-as-a-curable-disease. Accessed 5 Aug. 2020.

Grey, Aubrey de, and Michael Rae. *Ending Aging: The Rejuvenation Breakthroughs that Could Reverse Human Aging in Our Lifetime*. St. Martin's Press, 2007.

Hamilton, Caroline D. *One Man Zeitgeist: Dave Eggers, Publishing and Publicity*. Continuum, 2010.

Hamner, Everett. "The Predisposed Agency of Genomic Fiction." *American Literature*, vol. 83, no. 2, 2011, pp. 413-41. Duke UP, doi:10.1215/00029831-1266108.

Hansell, R., and William Grassie, editors. *H +/-. Transhumanism and Its Critics*. Metanexus, 2011.

Harari, Yuval Noah. *21st Lessons for the 21st Century*. Penguin, 2018.

Haraway, Donna. "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin." *Environmental Humanities*, vol. 6, 2015, pp. 159-65.

Hauskeller, Michael, Thomas D. Philbeck, and Curtis D. Carbonell. "Posthumanism in Film and Television." Introduction. *The Palgrave Handbook of Posthumanism in Film and Television*, edited by Michael Hauskeller, Thomas D. Philbeck and Curtis D. Carbonell. Palgrave Macmillan, 2015, pp. 1-7

Hayes-Brady, Clare. "Horning In: Language, Subordination and Freedom in the Short Fiction of George Saunders." Coleman and Gronert Ellerhoff, pp. 23-39.

Hayles, N. Katherine. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. U of Chicago P, 1999.

---. "Wrestling with Transhumanism." Hansell and Grassie, pp. 215-26.

Hendricks, Michael. "The False Science of Cryonics." *MIT Technology Review*, 15 Sept. 2015, www.technologyreview.com/s/541311/the-false-science-of-cryonics/. Accessed 5 Aug. 2020.

Her. Directed by Spike Jonze, Annapurna Pictures, 2013.

Herbrechter, Stefan. *Posthumanism: A Critical Analysis.* Bloomsbury Academic, 2013.

---. "Posthumanism and the Posthuman in Don DeLillo's *Point Omega* and *Zero K*." stefanherbrechter.com/wp-content/uploads/2011/10/Posthumanism-and-the-Posthuman-in-DeLillos-Point-Omega-and-Zero-K.pdf. Accessed 5 Aug. 2020.

---. "Rosi Braidotti (2013) *The Posthuman*." *Culture Machine*, 2013, svr91.edns1.com/~culturem/index.php/cm/article/view/495/516. Accessed 5 Aug. 2020.

Hobbs, Philippa. "'You Willingly Tie Yourself to These Leashes': Neoliberalism, Neoliberal Rationality, and the Corporate Workplace in Dave Eggers' *The Circle*." *Dandelion: Postgraduate Arts Journal and Research Network*, vol. 8, no. 1, 2017, pp. 1-13, doi:10.16995/ddl.360.

Hogan, Ron. "*Generosity*: Richard Powers Is Now Canonical SF." *Tor.com*, 28 Apr. 2011, www.tor.com/2011/04/28/richard-powers-generosity/. Accessed 7 Aug. 2020.

Höpker, Karin. "Happiness in Distress: Richard Powers's *Generosity* and Narratives of the Biomedical Self." Kley and Kucharzewski, pp. 285-312.

Hopkinson, Nalo. *Midnight Robber*. Hachette USA, 2000.

Huang, Michelle N. "Creative Evolution: Narrative Symbiogenesis in Larissa Lai's *Salt Fish Girl*." *Amerasia Journal*, vol. 42, no. 2, 2016, pp. 118-38, doi:10.17953/aj.42.2.118.

Hughes, James. *Citizen Cyborg: Why Democratic Societies Must Respond to the Redesigned Human of the Future.* Westview Press, 2004.

"Human Cryopreservation." *KrioRus*, kriorus.ru/en/Human-cryopreservation. Accessed 5 Aug. 2020.

Hume, Kathryn. "Moral Problematics in the Novels of Richard Powers." *Critique: Studies in Contemporary Fiction*, vol. 54, no. 1, 2013, pp. 1-17, doi:10.1080/00111619.2012.681324.

Hutcheon, Linda. "The Complex Functions of Irony." *Revista Canadiense de Estudios Hispánicos*, vol. 16, no. 2, 1992, pp. 219-34.

---. *Narcissistic Narrative: The Metafictional Paradox*. Wilfrid Laurier UP, 1980.

---. *Narcissistic Narrative: The Metafictional Paradox*. 1980. Methuen, 1984.

Hutchins, Edwin. *Cognition in the Wild*. MIT P, 1996.

Huxley, Aldous. *Brave New World*. 1932. Harper Perennial, 2016.

Huxley, Julian. *New Bottles for New Wine*. Chatto & Windus, 1957.

Ickstad, Heinz. "Asynchronous Messaging: The Multiple Functions of Richard Powers's Fictions." Kley and Kucharzewski, pp. 23-43.

Ironman. Directed by Jon Favreau, Marvel Studios, 2008.

Istvan, Zoltan. *The Transhumanist Wager*. 2013.

Janet, Pierre. *Les médications psychologiques* [*Psychological Healing*]. 1919-25. Société Pierre Janet, 1984.

---. *L'automatisme psychologique* [*Psychological Automatism*].1889. Société Pierre Janet, 1973.

Jeffries, Stuart. "Neil Harbisson: The World's First Cyborg Artist." *The Guardian*, 6 May 2014, www.theguardian.com/artanddesign/2014/may/06/neil-harbisson-worlds-first-cyborg-artist. Accessed 5 Aug. 2020.

John, Eileeen, and Dominic McIver Lopes. *Philosophy of Literature: Contemporary and Classic Readings—An Anthology*. Blackwell Publishing, 2004.

Johnny Mnemonic. Directed by Robert Longo, Alliance Communications, 1995.

Jones, Gwyneth. *North Wind*. Tor Books, 1994.

---. *Phoenix Café*. Tor Books, 1998.

---. *White Queen*. Tor Books, 1991.

Kakutani, Michiko. "Inside the World of Big Data. *The Circle*, Dave Eggers's New Novel." *The New York Times*, 3 Oct. 2013, www.nytimes.com/2013/10/04/books/the-circle-dave-eggerss-new-novel.html. Accessed 3 Aug. 2020.

---. "Review: In Don DeLillo's 'Zero K,' Daring to Outwit Death." *The New York Times*, 25 Apr. 2016, www.nytimes.com/2016/04/26/books/review-in-don-delillos-zero-k-daring-to-outwit-death.html. Accessed 5 Aug. 2020.

Kass, Leon R. *Life, Liberty, and Defense of Dignity: The Challenge for Bioethics*. Encounter Books, 2002.

---. "Preface." *Beyond Therapy: Biotechnology and the Pursuit of Happiness*, edited by The President's Council on Bioethics. Harper Perennial, 2003, pp. xix-xxi.

Karkulehto, Sanna, Aino-Kaisa Koinstinen, Karoliina Lummaa, and Essi Varis. "Reconfiguring Human, Nonhuman and Posthuman: Striving for More Ethical Cohabitation." *Reconfiguring Human, Nonhuman and Posthuman in Literature and Culture*, edited by Sanna Karkulehto, Aino-Kaisa Koinstinen, and Essi Varis. Routledge, 2019, pp. 1-16.

Keen, Andrew. *Digital Vertigo: How Today's Online Social Revolution is Dividing, Diminishing, and Disorienting us.* St. Martin's Griffin, 2012.

Kelly, Bernard. "Review: Richard Powers' *Generosity*." *The Star*, 15 Nov. 2009, www.thestar.com/entertainment/books/2009/11/15/review_richard_powers_generosity. html. Accessed 7 Aug. 2020.

Kley, Antje, and Jan D. Kucharzewski. "Introduction." Kley and Kucharzewski, pp. 9-20.

---, editors. *Ideas of Order: Narrative Patterns in the Novels of Richard Powers*. Universitätsverlag Winter, 2012.

Kurzweil, Ray. *The Singularity is Near: When Humans Transcend Biology*. Viking, 2005.

LaCapra, Dominick. *Representing the Holocaust: History, Theory, Trauma*. Cornell UP, 1996.

---. "Trauma, Absence, Loss." *Critical Inquiry*, vol 25, no. 4, 1999, pp. 696-727.

---. *Writing History, Writing Trauma*. Johns Hopkins UP, 2001.

Lacey, Catherine. *The Answers*. Picador, 2017.

LaGrandeur, Kevin. "Art and the Posthuman." *Posthumanism: The Future of Homo Sapiens*, edited by Michael Bess and Diana Walsh Pasulka. Gale, 2018, pp. 377-88.

Lai, Larissa. *Salt Fish Girl*. Thomas Allen, 2002.

Laist, Randy. Review of *Don DeLillo: Balance at the Edge of Belief, by* of Jesse Kavadlo. *Rocky Mountain Review*, 75, Spring 2008, pp. 73-75.

Lanier, Jaron. *Ten Arguments for Deleting Your Social Media Accounts Right Now*. Henry Holt and Company, 2018.

---. *You Are Not a Gadget: A Manifesto*. Vintage Books, 2010.

Latham, Rob. "Literary Precursors." McFarlane, Murphy, and Schmeink, pp. 7-14.

Laub, Dori. "Truth and Testimony: The Process and the Struggle." Caruth, pp. 61-75.

Lentricchia, Frank. *Introducing Don DeLillo*. Duke UP, 1991.

Limitless. Directed by Neil Burger, Relativity Media / Virgin Produced, 2011.

Linklater, Alexander. "*The Circle* by Dave Eggers – Review." *The Guardian*, 12 Oct. 2013, *www.theguardian.com/books/2013/oct/12/the-circle-dave-eggers-review*. Accessed 3 Aug. 2020.

López-Otín, Carlos. *La vida en cuatro letras: Claves para entender la diversidad, la enfermedad y la felicidad*. Ediciones Paidós, 2019.

Luckhurst, Roger. *The Trauma Question*. Routledge, 2008.

Lucy. Directed by Luc Besson, EuropaCorp, 2014.

Ludwigs, Marina. "The Posthuman Turn in Dave Eggers' *The Circle*." *Anthropoetics*, vol. 21, no. 1, 2015, anthropoetics.ucla.edu/ap2101/. Accessed 3 Aug. 2020.

Lykken, David, and Auke Tellegen. “Happiness Is a Stochastic Phenomenon.” *Psychological Science*, vol. 7, no. 1, 1996, pp. 186-89.

Lyon, David. Introduction. *Liquid Surveillance: A Conversation*, by Zygmunt Bauman and David Lyon, Polity Press, 2013, pp. 8-21.

---. Introduction. *Surveillance as Social Sorting*: *Privacy, Risk and Digital Discrimination*, edited by David Lyon. Routledge, 2003, pp. 1-9.

---. “Surveillance Culture: Engagement, Exposure, and Ethics in Digital Modernity.” *International Journal of Communication*, vol. 11, 2017, pp. 824-42.

Macrae, Andrea. *Discourse Deixis in Metafiction: The Language of Metanarration, Metalepsis and Disnarration*. Routledge, 2019.

Maffey, Ross, and Yugin Teo. “Changing Channels of Technology: Disaster and (Im)mortality in Don DeLillo’s *White Noise*, *Cosmopolis* and *Zero K*.” *C21 Literature: Journal of 21st-Century Writings*, vol. 6, no. 2, 2018, doi:10.16995/c21.74.

Mahon, Peter. *Posthumanism: A Guide for the Perplexed*. Bloomsbury Academic, 2017.

The Matrix Trilogy. Directed by the Wachowskis, Warner Bros., 1999-2003.

Mayer-Schönberger, Viktor. *Delete: The Virtue of Forgetting in the Digital Age*. Princeton UP, 2009.

McCaffery, Larrey. “An Expanded Interview with David Foster Wallace.” *Conversations with David Foster Wallace*, edited by Stephen J. Burn. 1993. UP of Mississippi Jackson, 2012, pp. 21-52.

McClelland, Mark. *Upload.* 2012.

McFarlane, Anna, Graham J. Murphy, and Lars Schmeink. The *Routledge Companion to Cyberpunk Culture*. Routledge, 2020.

McHale, Brian. “Free Indirect Discourse: A Survey of Recent Accounts.” *PTL: A Journal for Descriptive Poetics and Theory of Literature*, vol. 3, 1978, pp. 249-78.

McInerney, Jay. “Why Is She Smiling?” *The New York Times*: *Sunday Book Review*, 1 Oct. 2009, www.nytimes.com/2009/10/04/books/review/McInerney-t.html. Accessed 7 Aug. 2020.

McKibben, Bill. *Enough: Genetic Engineering and the End of Human Nature*. 2003. Bloomsbury UK, 2004.

McMillan, Graeme. “Dave Eggers’ *The Circle*: What the Internet Looks Like if You Don’t Understand It.” Wired, 11 Oct. 2013, www.wired.com/2013/10/the-circle-review-dave-eggers/. Accessed 3 Aug. 2020.

McNally, Richard J. *Remembering Trauma.* Harvard UP, 2003.

Mehlman, Maxwell J. *Transhumanist Dreams and Dystopian Nightmares: The Promise and Peril of Genetic Engineering*. The Johns Hopkins UP, 2012.

“Membership FAQ.” *Alcor Life Extension Foundation*, alcor.org/FAQs/faq06.html. Accessed 7 Aug. 2020.

Merkle, Ralph C. “The Molecular Repair of the Brain, Part II.” *Cryonics*, vol 15, no. 2, 1994, alcor.org/cryonics/cryonics1994-2.pdf. Accessed 5 Aug. 2020.

---. "Will Cryonics Work?" www.merkle.com/cryo/probability.html. Ralph C. Merkle. Accessed 5 Aug. 2020.

Miah, Andy. "Bioart." Ranisch and Sorgner. Peter Lang, 2014.

Michod, Alec. "An Interview with Richard Powers." *Believer Magazine*, 1 Feb. 2007, believermag.com/an-interview-with-richard-powers/. Accessed 7 Aug. 2020.

Milsanek, Tony. "Review of Richard Powers, *Generosity: An Enhancement*." *The American Journal of Bioethics*, vol. 10, no. 11, 2010, pp. 31-32, doi:10.1080/00111619.2012.681324.

Minerva, Francesca. *The Ethics of Cryonics*. Palgrave Macmillan, 2018.

Moravec, Hans. *Mind Children: The Future of Robot and Human Intelligence.* Harvard UP, 1988.

More, Max. "The Extropian Principles 3.0: A Transhumanist Declaration." 1998. *Robert Munafo*, mrob.com/pub/religion/extro_prin.html. Accessed 5 Aug. 2020.

---. "The Philosophy of Transhumanism." More and Vita-More, 3-17.

---. "Transhumanism: Toward a Futurist Philosophy." *Extropy* 6, Summer 1990, pp. 6-12.

---. "True Transhumanism: A Reply to Don Ihde." Hansell and Grassie, pp. 136-46.

More, Max, and Natasha Vita-More, editors. *The Transhumanist Reader: Classical and Contemporary Essays on the Science, Technology, and Philosophy of the Human Future*. Wiley-Blackwell, 2013.

Morrison, Toni. *Beloved*. Alfred A. Knopf, 1987.

Mosle, Sara. "My Brother's Keeper." *The New York Times*, 20 Feb. 2000, archive.nytimes.com/www.nytimes.com/books/00/02/20/reviews/000220.20moslet.html . Accessed 3 Aug. 2020.

Moylan, Tom. *Scraps of the Untainted Sky: Science Fiction, Utopia, Dystopia*. Westview Press, 2000.

Murphy, Graham J. "The Mirrorshades Collective." The *Routledge Companion to Cyberpunk Culture*, edited by Anna McFarlane, Graham J. Murphy, and Lars Schmeink. Routledge, 2020, pp. 15-23.

Nayar, Pramod K. *Posthumanism*. Polity Press, 2014.

Nealon, Jeffrey. *Post-Postmodernism*. Stanford UP, 2012.

Nussbaum, Martha. "Finely Aware and Richly Responsible." John and McIver Lopes, pp. 329-40.

O'Connell, Mark. *To Be a Machine*. Granta Books, 2017.

Okbay, Aysu, et al. "Genetic Variants Associated with Subjective Well-Being, Depressive Symptoms, and Neuroticism Identified Through Genome-Wide Analyses." *Nature Genetics*, vol. 48, no. 6, 2016, pp. 624-33, doi:10.1038/ng.3552.

Okorofor, Nnedi. *The Book of Phoenix*. DAW Books, 2015.

Oltean, Stefan. "A Survey of the Pragmatic and Referential Functions of Free Indirect Discourse." *Poetics Today*, vol. 14, no. 4, 1993, pp. 691-714.

O'Reilly, Kira. *Falling Asleep with a Pig*. Cornerhouse, 2009.

Orwell, George. *Nineteen Eighty-Four*. 1949. Penguin Books, 2008.

Oxford Ancestors. www.oxfordancestors.com/. Accessed 7 Aug. 2020.

Oziewicz, Marek. "Speculative Fiction." *Oxford Research Encyclopedia of Literature*, Mar. 2017, doi:10.1093/acrefore/9780190201098.013.78.

Parikka, Jussi. "Anthropocene." *Posthuman Glossary*, edited by Rosi Braidotti. Bloomsbury, 2018, pp. 51-53.

Paton, Graeme. "Smart Drugs Rife at Oxbridge, Say Students." *The Telegraph*, 27 Sep 2013, www.telegraph.co.uk/education/universityeducation/10341013/Smart-drugs-rife-at-Oxbridge-say-students.html. Accessed 5 Aug. 2020.

Pearce, David. *The Hedonistic Imperative*. 1995. happymutations.com/ebooks/david-pearce-the-hedonistic-imperative.pdf. Accessed 7 Aug. 2020.

Pederson, Joshua. "Speak, Trauma: Toward a Revised Understanding of Literary Trauma Theory." *Narrative*, vol. 22, no. 3, 2014, pp. 333-53, doi:10.1353/nar.2014.0018.

Peek, Michelle. "Humanitarian Narrative and Posthumanist Critique: Dave Eggers's *What Is the What*." *Biography*, vol. 35, no. 1, pp. 115-36.

Person, Lawrence. "Notes Toward a Postcyberpunk Manifesto." *Slashdot*, 9 Oct. 1999, news.slashdot.org/story/99/10/08/2123255/notes-toward-a-postcyberpunk-manifesto. Accessed 9 Jul 2020.

Piep, Karsten. (2019) "'You're Going to Make Us All Happy': Orientalist Appropriations of the Berber Woman in Richard Powers's *Generosity*." *Critique: Studies in Contemporary Fiction*, vol. 60, no. 1, 2019, pp. 49-57, doi:10.1080/00111619.2018.1444579.

Piercy, Marge. *Woman on the Edge of Time*. Alfred A. Knopf, 1976.

Pignagnoli, Virginia. "Surveillance in Post-Postmodern American Fiction: Dave Eggers's *The Circle*, Jonathan Franzen's *Purity* and Gary Shteyngart's *Super Sad True Love Story*." *Spaces of Surveillance: States and Selves*, edited by Susan Flynn and Antonia Mackay, Palgrave Macmillan, 2017, pp. 151-67.

"Policies." *Zoltan 2020*, zoltan2020.com/policies/. Accessed 5 Aug. 2020.

Postman, Neil. *Technopoly*. Alfred A. Knopf, 1992.

Powers, Richard. *The Echo Maker*. Farrar, Straus and Giroux, 2006.

---. *Galatea 2.2*. Harper Perennial, 1995.

---. *Generosity: An Enhancement.* Farrar, Straus and Giroux, 2009.

---. *The Gold Bug Variations*. William Morrow and Company, 1991.

---. *The Overstory*. W. W. Norton and Company, 2018.

---. *Three Farmers on the Way to a Dance*. William Morrow and Company, 1985.

The President's Council on Bioethics. *Beyond Therapy: Biotechnology and the Pursuit of Happiness.* Harper Perennial, 2003.

Preston, Alex. "*Zero K* by Don DeLillo—Profound and Beautiful." *The Guardian*, 15 May 2016, www.theguardian.com/books/2016/may/15/don-de-lillo-zero-k-review. Accessed 5 Aug. 2020.

Prince, Gerald J. "The Disnarrated." *Style*, vol. 22, no. 1, 1988, pp. 1-8.

Prisco, Giulio. "Transcendent Engineering." More and Vita-More, pp. 234-40.

Ranisch, Robert, and Stefan Lorenz Sorgner. "Introducing Post- and Transhumanism." Ranisch and Sorgner, pp. 7-27.

---, editors. *Post- and Transhumanism: An Introduction*. Peter Lang, 2014.

Raulerson, Joshua. *Singularities: Technoculture, Transhumanism, and Science Fiction in the 21st Century*. Liverpool UP, 2013.

Ready Player One. Directed by Steven Spielberg, Warner Bros., 2018.

Relph, Edward. *The Modern Urban Landscape*. Routledge, 1987.

Rheingold, Howard. *Smart Mobs: The Next Social Revolution*. Perseus Publishing, 2002.

---. *The Virtual Community.* Addison-Wesley, 1993.

Richardson, Brian. "Denarration in Fiction: Erasing the Story in Beckett and Others." *Narrative*, vol. 9, no. 2, 2001, pp. 168-75.

Rifkin, Jeremy. *Algeny: A New Word, a New World*. Viking, 1983.

---. *The Biotech Century: Harnessing the Gene and Remaking the World*. Jeremy P. Tarcher/Penguin, 1998.

RoboCop. Directed by Paul Verhoeven, Orion Pictures, 1987.

Rucker, Rudy. *Postsingular.* Tor Books, 2007.

Russ, Joanna. *The Female Man*. Bantam Books, 1974.

Saenz, Aaron. "Post Human Era – Transhumanism Music You Can Dance To." *Singularity Hub*, 10 Nov. 2010, singularityhub.com/2010/11/10/post-human-era-transhumanism- music-you-can-dance-to-video/. Accessed 5 Aug. 2020.

Saricks, Joyce G. *The Readers' Advisory Guide to Genre Fiction. Second ed., American Library Association, 2009.*

Saunders, George. "I CAN SPEAK!™." *The Brief and Frightening Reign of Phil.* Bloomsbury, 2007, pp. 101-110.

Schaberg, Christopher, 2017, "Ecological Disorientation in Airline Ads and in DeLillo's *Zero K.*" *ISLE: Interdisciplinary Studies in Literature and Environment*, vol. 24, no. 1, 2017, pp. 75-91.

Schaefer, Heike. "The Pursuit of Happiness 2.0: Consumer Genomics, Social Media, and the Promise of Literary Innovation in Richard Powers's Novel *Generosity: An Enhancement*." Kley and Kucharzewski, pp. 263-84.

Scherr, Alexander. "The Emergence of 'Genomic Life Writing' and 'Genomic Fiction' as Indicators of Cultural Change: A Case Study of Richard Powers' Novel *Generosity: An Enhancement* (2009)." *REAL Yearbook of Research in English and American*

Literature. Vol. 32, edited by Ingo Berensmeyer, Herbert Grabes, and Sonja Schillings, Narr Francke Attempto, 2016, pp. 121-41.

Schwab, Klaus. *Shaping the Fourth Industrial Revolution*. World Economic Forum, 2018.

Shelley, Mary. *Frankenstein*. 1818. Dover Publications, 1994.

Shermer, Michael. "Nano Nonsense and Cryonics." *Scientific American*, vol. 285, no. 3, 2001, p. 29.

Shiner, Lewis. *Frontera*. Baen, 1984.

Shirley, John. *Eclipse: A Song Called Youth*. 1985. Dover Publications, 2017.

Shirow, Masamune. *Ghost in the Shell*. Kodansha, 1989-1990.

Shteyngart, Gary. *Super Sad True Love Story*. Random House, 2010.

Siebert, Charles. *Angus*: *A Memoir*. Crown Publications, 2000.

Slouka, Mark. *War of the Worlds: Cyberspace and the High-Tech Assault on Reality*. Basic Books, 1995.

Smelik, Anneke. "Film." Clarke and Rossini, pp. 109-20.

Smith, Kyle. "Dave Eggers's Prescient Vision of Progressive Dictatorship." *National Review*, 12 Apr. 2017, www.nationalreview.com/2017/04/dave-eggers-the-circle-progressive-fascism-prescient-novel/. Accessed 3 Aug. 2020.

Snow, Charles P. *The Two Cultures and the Scientific Revolution*. 1959. Martino Fine Books, 2018.

Souli, Sarah. "Q & A: Zoltan Istvan." *Journal of Beautiful Business*, 17 Oct. 2018, journalofbeautifulbusiness.com/q-a-zoltan-istvan-253a74f67277. Accessed 5 Aug. 2020.

Stein, Garth. *The Art of Racing in the Rain*. HarperCollins, 2008.

Stephenson, Neal. *The Diamond Age*. Bantam Books, 1995.

---. *Snow Crash*. Bantam Books, 1992.

Sterling, Bruce. *Islands in the Net*. Arbor House, 1988.

---. Preface. *Mirrorshades: The Cyberpunk Anthology*, edited by Bruce Sterling. Ace Books, 1986, pp. ix-xvi.

---. *Schismatrix*. Arbor House, 1985.

Stevens, Ailsa. "Book Review: Generosity." *BioNews*, 20 Sept. 2010, www.bionews.org.uk/page_92546. Accessed 7 Aug. 2020.

Stock, Gregory. *Redesigning Humans: Our Inevitable Genetic Future*. Houghton Mifflin Harcourt, 2002.

Stoicheff, Peter. "The Chaos of Metafiction." *Chaos and Order*: *Complex Dynamics in Literature and Science*, edited by N. Katherine Hayles. U of Chicago P, 1991, pp. 85-99.

Stolberg, Sheryl Gay. "A Genetic Future Is Both Tantalizing and Disturbing: A Small Leap to Designer Babies." *New York Times*, 1 Jan. 2000, www.nytimes.com/2000/01/01/news/visions-biology- genetic-future-both-tantalizing-disturbing-small-leap-designer.html. Accessed 7 Aug. 2020.

Stross, Charles. *Accelerando*. Ace Books, 2005.

---. *Singularity Sky*. Ace Books, 2003.

Tayler, Christopher. "*Generosity* by Richard Powers" *The Guardian*, 2 Jan. 2010, www.theguardian.com/books/2010/jan/02/richard-powers-generosity-fiction-review. Accessed 7 Aug. 2020.

Terenzi, Fionella. *Music from the Galaxies*. Island Records, 1991.

The Terminator, directed by James Cameron, Hemdale / Pacific Western Productions / Cinema '84, 1984.

The Thirteenth Floor, directed by Josef Rusnak, Centropolis Entertainment, 1999.

Thomas, Paul L. "Challenging Science Fiction and Speculative Fiction." Introduction. *Science Fiction and Speculative Fiction: Challenging Genres*, edited by Paul L. Thomas. Sense Publishers, 2013, pp. 1-13.

Thompson, Joel. "Transhumanism: How Far Is Too Far?" *The New Bioethics*, vol. 23, no. 2, 2017, doi:10.1080/20502877.2017.1345092.

Thurow, Lester C. *Creating Wealth: The New Rules for Individuals, Companies, and Countries in a Knowledge-Based Economy*. Nicholas Brealey Publishing, 1999.

Tirosh-Samuelson, Hava. "Engaging Transhumanism." *H+/-: Transhumanism and Its Critics*. Hansell and Grassie, pp. 19-52.

---. "In Pursuit of Perfection: The Misguided Transhumanist Vision." *Theology and Science*, vol. 16, no. 2, 2018, pp. 200-22, doi:10.1080/14746700.2018.1463659.

Todorov, Tzvetan. *Symbolism and Interpretation*. 1978. Translated by Catherine Porter, Cornell UP, 1982.

Tolonen, Tuutikki. *Monster Nanny*. Illustrated by Pasi Pitkänen. Translated by Annika Silver, Houghton Mifflin Harcourt, 2017.

Total Recall. Directed by Paul Verhoeven, Carolco Pictures, 1990.

Transcendence. Directed by Wally Pfister, Alcon Entertainment / DMG Entertainment / Straight Up Films, 2014.

Turkle, Sherry. *Alone Together: Why We Expect More from Technology and Less from Each Other*. Basic Books, 2011.

23andMe. www.23andme.com/en-int/. Accessed 7 Aug. 2020.

Ullman Ellen. "Ring of Power: *The Circle*, by Dave Eggers." *The New York Times*, 1 Nov. 2013, www.nytimes.com/2013/11/03/books/review/the-circle-by-dave-eggers.html. Accessed 3 Aug. 2020.

Van der Kolk, Bessel A., and Onno van der Halt. "The Intrusive Past: The Flexibility of Memory and the Engraving of Trauma." Caruth, pp. 158-82.

VanderMeer, Jeff. *Annihilation*. Farrar, Straus and Giroux, 2014.

Vickroy, Laurie. *Reading Trauma Narratives*. U of Virginia P, 2015.

---. *Trauma and Survival in Contemporary Fiction*. U of Virginia P, 2002.

Vinge, Vernor. "The Coming Technological Singularity." *Interdisciplinary Science and Engineering in the Era of Cyberspace: Proceedings of a Symposium Cosponsored by the NASA Lewis Research Center and the Ohio Aerospace Institute and Held in Westlake, Ohio, Mar. 30-31*, Lewis Research Center, 1993, pp. 11-22.

---. *Marooned in Realtime*. Bluejay Books, 1968.

Vint, Sherryl. *Bodies of Tomorrow: Technology, Subjectivity, Science Fiction.* U of Toronto P, 2007.

Vita-More, Natasha. "Aesthetics: Bringing the Arts & Design into the Discussion of Transhumanism." More and Vita-More, pp. 18-27.

---. "Primo Posthuman: A Product of Ageless 2030." 1997, revised 2011, archimorph.com/2011/01/23/primo-post-human-trans-humanist-culture/. Accessed 5 Aug. 2020.

Vleugel, Thijs. "Meaning Irony. The Ethics of Irony." *Frame*: *Journal of Literary Studies*, vol. 17, no. 1, 2004, pp. 1-15.

Wales, Katie. *A Dictionary of Stylistics.* 1990. 3rd ed, Routledge, 2014.

Walker, Mark. *Happy-People-Pills for All*. Wiley Blackwell, 2013.

War Games. Directed by John Badham, United Artists / Sherwood Productions,1983.

Watson, Keith. "A Disarmingly Humanist Vision: Don DeLillo's *Zero K*." *Slant Magazine*, 2 May 2016, www.slantmagazine.com/books/a-disarmingly-humanist-vision-don-delillos-zero-k/. Accessed 5 Aug. 2020.

Waugh, Patricia. *Metafiction: The Theory and Practice of Self-Conscious Fiction.* Methuen, 1984.

Weaver, Courtney. "Inside the Weird World of Cryonics." *Financial times*, 18 Dec. 2015, www.ft.com/content/d634e198-a435-11e5-873f-68411a84f346. Accessed 5 Aug. 2020.

Weinstein, Alexander. *Children of the New World: Stories*. St Martin's Press, 2016.

Weiss, Denis M. "Digital Ambivalence: Utopia, Dystopia, and the Digital Cosmos." *The Utopian Fantastic: Selected Essays from the Twentieth International Conference on the Fantastic in the Arts*, edited by Martha Bartter, Praeger Publishers, 2004, pp. 67-69.

Welsh, Brandon C. and David P. Farrington. *Making Public Places Safer: Surveillance and Crime Prevention.* Oxford UP, 2009.

Wenz, John. "Meet the Astronomer Who Listens to the Music of the Cosmos." *Popular Mechanics*, 12 May 2015, www.popularmechanics.com/space/a15478/fiorella-terenzi-acoustic-astronomy/. Accessed 5 Aug. 2020.

"What is Positive Psychology?" *Positive Psychology Institute*, www.positivepsychologyinstitute.com.au/what-is-positive-psychology. Accessed 7 Aug. 2020.

Whitehead, Anne. *Trauma Fiction*. Edinburgh UP, 2004.

"Why Scottsdale?" *Alcor Life Extension Foundation*, alcor.org/AboutAlcor/scottsdale.html. Accessed 5 Aug. 2020.

Wolfe, Cary. "What is Posthumanism?" Introduction. *What is Posthumanism?*, edited by Cary Wolfe. U of Minnesota P, 2010, pp. xi-xxxiv.

Wood, James. “Brain Drain: The Scientific Fictions of Richard Powers.” *The New Yorker*, 5 Oct. 2009, www.newyorker.com/magazine/2009/10/05/brain-drain. Accessed 7 Aug. 2020.

X-Men. Directed by Bryan Singer, Marvel Entertainment Group / The Donners' Company / Bad Hat Harry Productions, 2000.

Yaszek, Lisa, and Jason W. Ellis. “Science Fiction.” Clarke and Rossini, pp. 71-83.

Years and Years. Created by Russell T. Davies, Red Production Company, 2019.

Young, Simon. *Designer Evolution: A Transhumanist Manifesto.* Prometheus Books, 2006.

Zahl, David. *Seculosity: How Career, Parenting, Technology, Food, Politics, and Romance Became Our New Religion and What to Do about It*. Fortress Press, 2019.

Zilahy, Jeffrey. “Pragmatic Paths in Transhumanism.” *The Transhumanism Handbook*, edited by Newton Lee. Springer, 2019, pp. 605-12.