

Trabajo Fin de Grado

"Having a body doesn't give you any rights at all":
Transhumanism and Critical Posthumanism in
Catherine Lacey's *The Answers* (2017).

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2021

Abstract

Recent scientific breakthroughs under the wing of the Fourth Industrial Revolution, particularly in the realm of biotechnology and human enhancement, have prompted an integral redefinition of the human, looking towards the posthuman state. Stances on this question range from the transhumanists' advocacy of overcoming biological limits by means of technological enhancement, to the ideas proposed by critical posthumanism, which draws from antihumanism and postanthropocentrism to advocate for a redefinition of the human that places emphasis on embodiment and a non-hierarchical relationship with natural and technological others.

These debates have been translated into literary works, particularly into the field of speculative fiction. In this context, this dissertation will analyze Catherine Lacey's novel *The Answers* (2017), which presents the Girlfriend Experiment, a state-of-the-art research project aimed at taking the next step in our "emotional evolution", bankrolled by a film industry mogul. The novel criticizes the unrestricted, unethical development of technology along the lines of transhumanist thought by presenting the Experiment's harrowing aftermath upon its subjects of research. In its denunciation of the exploitation of life under techno-capitalism, enmeshed with gender and class discrimination, and its reclaiming of the Girlfriends' embodiment, *The Answers* offers a critical take on the Fourth Industrial Revolution aligned with the tenets of critical posthumanism.

Keywords: Fourth Industrial Revolution, transhumanism, critical posthumanism.

Resumen

Los avances científicos al amparo de la Cuarta Revolución Industrial, sobre todo en el ámbito de la biotecnología y el perfeccionamiento humano, han impulsado una redefinición integral de la humanidad, con la mirada puesta en lo posthumano. Existen diferentes posturas sobre esta cuestión, yendo desde el transhumanismo, que busca superar los límites biológicos usando la tecnología; al posthumanismo crítico, que se inspira en el antihumanismo y el postantropocentrismo para abogar por una redefinición de lo humano que haga hincapié en la corporeidad y en una relación no jerárquica con los otros naturales y tecnológicos.

Estos debates se han manifestado en obras literarias, especialmente en el campo de la ficción especulativa. Este trabajo analizará *The Answers* (2017), una novela de Catherine Lacey que narra el "Girlfriend Experiment", un proyecto de investigación de vanguardia destinado a dar el siguiente paso en nuestra evolución emocional, financiado por un magnate del cine. La novela ilustra las devastadoras consecuencias de este experimento, criticando así el desarrollo científico y tecnológico de acuerdo con las ideas transhumanistas. En su denuncia de la explotación bajo el tecno-capitalismo contemporáneo, agravada por factores de clase y género, y su reivindicación de la corporeidad, *The Answers* ofrece una visión crítica de la Cuarta Revolución Industrial en sintonía con los principios del posthumanismo crítico.

Palabras clave: Cuarta Revolución Industrial, transhumanismo, posthumanismo crítico.

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1. INTRODUCTION.

Klaus Schwab, the founder of the World Economic Forum, claims that the turn of the 21st century has ushered in a "fourth industrial revolution" (12) based on digital advances and the integration of new disciplines such as artificial intelligence and gene sequencing. This revolution, notable for its "size, speed and scope", is bound to bring about "unprecedented paradigm shifts in the economy, business, society, and individual", for technological innovations are "redefining what it means to be human [...] in ways that were previously the preserve of science fiction" (Schwab 8, 93).

The scientific breakthroughs under the wing of the Fourth Industrial Revolution, particularly in the realm of human enhancement and biotechnology, have sparked off intense ethical debates on their possible effects over the human state. These could reach the extent of prompting an integral redefinition of the human, moving towards a potential posthuman stage. Stances on the question range from the bioconservatist opposition to the modification of nature on the grounds that it would "undermine human dignity" (Bostrom "Defense" 203) held by well-known figures as Michael Sandel in *The Case Against Perfection: Ethics in the Age of Genetic Engineering*, Francis Fukuyama in *Our Posthuman Future: Consequences of the Biotechnology Revolution* or Jeremy Rifkin in *Biotech Century: Harnessing the Gene and Remaking the World*; to the transhumanist belief that these technologies hold "enormous potential for valuable and humanly beneficial uses", and ultimately will turn us into "'posthuman' beings who may have indefinite health-spans, much greater intellectual faculties than any current human being [...] as well as the ability to control their own emotions" (Bostrom "Defense" 203).

Deviating from both these technophobic and apologist standpoints towards human enhancement, critical posthumanism addresses the question of the posthuman drawing

from antihumanist and postanthropocentric tenets (Braidotti "Framework" 31). Posthumanist critics reject transhumanism as an "*intensification* of humanism" (Wolfe xv, emphasis in the original), because it abides the narrow definition of the human established by the Enlightenment, whereby the white, able-bodied, heterosexual Man stands as "the measure of all things", and those who do not conform to this ideal are relegated to "the less than human status of disposable bodies" (Braidotti *The Posthuman* 13). Diverging from this discriminatory and anthropocentric privileging of the Man over human and non-human others, posthumanist thinkers view the human as "an assemblage, co-evolving with other forms of life, enmeshed with the environment and technology", and thus propose a "more inclusive and therefore ethical understanding of life" (Nayar 13, 19).

These ethical debates on human enhancement have been reflected in literature, particularly in speculative fiction, which the seminal posthumanist scholar Katherine Hayles declares "the locus classicus for re-framing transhumanist questions" ("Wrestling" 2). In line with Hayles' assertion, this dissertation seeks to analyze *The Answers* (2017), a novel by the American author Catherine Lacey, under the light of transhumanist and critical posthumanist discourses.

The Answers, a work that has been described as "genre-blending" and "flirting with science fiction" (Rappis), narrates how Mary, a young woman raised away from society by fundamentalist Christian parents and suffering from an excruciating and mysterious illness, engages in an "income-generating experience" to be able to afford PAKing, the only therapy effective against her symptoms. She becomes involved in the Girlfriend Experiment (GX), a research project bankrolled by the uber-famous actor-filmmaker Kurt Sky, aimed at taking the next step in our "emotional evolution" through "*the development of a more honest, nuanced view of human pair-bond selection, behavior,*

and maintenance" (Lacey 46, emphasis in the original). After a series of secretive interviews, several women are hired to fulfill different roles as, among others, Kurt's Anger, Maternal or Intellectual Girlfriend, as part of the magnate's extravagant attempt to establish a sincere romantic connection. Mary is selected as Kurt's Emotional Girlfriend and must undergo a series of Relational Experiments while measured by the Research Team's neurologists. Alternating between Mary's autodiegetic narration in Parts One and Three and a heterodiegetic narration focalizing through multiple characters in Part Two, the novel depicts how the bond between Mary and Kurt grows increasingly intimate. She is finally dismissed after a violent accident with Ashley, the Anger Girlfriend, who has become manic after the Research Team's unethical tests with Internal Directives. The GX's findings are collected—unbeknownst to the Girlfriends—into Kurt's magnum opus, the film *The Walk*, and the design of Identity Distance Therapy, a cutting-edge wearable device that promises to suppress the human need for romantic love.

This dissertation wants to argue that *The Answers* sides with critical posthumanism in its denunciation of the Research Team's conception of human enhancement and technological development, in turn informed by the transhumanist ambition of transcending human nature by means of enhancement and disembodiment. By granting access to the Girlfriends', the Research Team's and Kurt's internal focalization in Part Two, the novel gradually discloses Kurt's ego-driven intentions, the GX's unethical practices, and its devastating material consequences on its subjects of research. In this, *The Answers* acts as a cautionary tale about the possible negative outcomes of unhindered technological development, aggravated by gender and class factors and by the unlimited power accorded to millionaires and celebrities in the contemporary setting of advanced capitalism.

In order to analyze the deployment of these discourses in the novel, this dissertation will first summarize the main tenets of transhumanism and critical posthumanism, paying special attention to the issue of embodiment, which is particularly significant for the novel's posthumanist denunciation. Once this theoretical framework has been established, this dissertation will move on to examine how these theories translate into the novel, focusing first on the appropriation of transhumanist principles by the Research Team and then on the novel's condemnation of the former, which is aligned with critical posthumanist ideas. This last section will concentrate on the relation between technological development and trauma, capitalism, and embodiment.

2. THEORETICAL FRAMEWORK.

2.1. Transhumanism.

The preeminent transhumanist thinker Max More defines this loose movement as an ensemble of "philosophies of life that seek the continuation and acceleration of the evolution of intelligent life beyond its currently human form and human limitations by means of science and technology" ("Philosophy" 3). These enhancement options include "radical extension of human health-span, eradication of disease, elimination of unnecessary suffering, and augmentation of human intellectual, physical, and emotional capacities" (Bostrom "Values" 3). In other words, transhumanism argues for the radical extension of human capabilities in perpetual progress or extropia towards the posthuman state.

Transhumanism as defined above took form in the latter part of the 20th century, and was introduced explicitly in pivotal works such as FM-2030's *Are You a Transhuman? Monitoring and Stimulating Your Personal Rate of Growth in a Rapidly Changing World* and Max More's "Transhumanism: Towards a Futurist Philosophy".

As More spells out, transhumanist philosophy is rooted in classical humanism and champions traditionally Enlightened ideals such as "the emphasis on progress, [...] on taking personal charge of creating better futures, [...] on reason, technology, scientific method, and human creativity" ("Philosophy" 4). To these tenets, transhumanists incorporate the use of technology to overcome biological limits.

Transhumanist thought has been met with opposition for mainly two reasons: that the posthuman state may be degrading for human dignity, and that human enhancement may trigger "inequity, discrimination, and stigmatization" (Bostrom "Defense" 208) in our future society. Facing these accusations, transhumanists acknowledge the pernicious potential of mismanaged technology, but maintain that they seek to uplift all sentient beings (Humanity+) and that wide access to scientific advancements will lessen social inequality and encourage tolerance and understanding (Bostrom "Values" 11). Still, reasonable doubts have been voiced by critics associated with critical posthumanism, namely because of the transhumanist disregard of the social and class factors enmeshed with access to technology and human enhancement (Hayles "Wrestling").

2.2. Critical posthumanism.

Critical posthumanism shares with transhumanism the "perception of the human as a non-fixed and mutable condition" and "the notion of technogenesis" (Ferrando 27, 28), that is, of technology's "co-evolution with human development" (Hayles "Wrestling" 2). Despite these common concerns, posthumanism diverts from transhumanism in its break with Enlightened humanism and its endorsement of postanthropocentrism (Braidotti *Posthuman Knowledge* 8).

In her work *The Posthuman*, Braidotti exposes the antihumanist arguments at the core of her rejection of transhumanism:

At the start of it all there is He: the classical ideal of 'Man', formulated first by Protagoras as 'the measure of all things', later renewed in the Italian Renaissance as a universal model and represented in Leonardo da Vinci's Vitruvian Man. Together they uphold a specific view of what is 'human' about humanity. [...] Subjectivity is equated with consciousness, universal rationality, and self-regulating ethical behavior, whereas Otherness is defined as its negative and specular counterpart. In so far as difference spells inferiority, it acquires both essentialist and lethal connotations for people who get branded as 'others'. These are the sexualized, racialized, and naturalized others, who are reduced to the less than human status of disposable bodies. (13)

In other words, critical posthumanist critics appropriate the rejection of the "constructedness of the 'normal' human, and its exclusionary definition and practices" from the tradition of antihumanism, and expand its scope to include "non-human others" and denounce the damage inflicted upon them by the anthropocentric hierarchization of life (Nayar 46). In this vein, critical posthumanism proposes "a politics of response and responsibility toward all forms of life, toward difference" (Nayar 48), what Braidotti dubs "zoe-centered egalitarianism" (*The Posthuman* 60), that moves away from the humanist tenets upheld and renewed by transhumanism.

Posthumanism also steps aside from transhumanism in its critical position towards the risk of heightened social inequality. Braidotti forewarns the potential social problems the Fourth Industrial Revolution could raise:

Issues of egalitarian access to these advanced technologies, and the violence of social inequalities, run parallel to the massive job suppressions the new technologies are triggering in the job market. All these in turn take their toll on the on-going depletion of Earth resources. (*Posthuman Knowledge* 36)

Further developing this stance, posthumanist scholars denounce "the commodification of life by advanced capitalism" (Braidotti *The Posthuman* 59), also termed "life as surplus" (Cooper) or "bio-piracy" (Shiva), which exploits and disposes of the bodies of women, racialized and natural others. This critical attitude towards unconstrained technological development under capitalism amounts to a rejection of transhumanist theorists, whom Braidotti labels "champions of the Capitalocene" because of their backing of private enterprise and their links to the corporate world (*Posthuman Knowledge* 63).

Against the transhumanist and capitalist profit-oriented approach to the posthuman, critical posthumanism embraces the liberatory potential of technology (Braidotti *The Posthuman* 58), while seeking to redefine the posthuman in terms of antihumanism and postanthropocentrism, as firmly embedded in our material world and inextricably related with natural and technological others (Braidotti *Posthuman Knowledge* 67).

2.3. (Dis)embodiment.

A paramount point of disagreement between critical posthumanist and transhumanist thought is their stance towards embodiment, ultimately arising from their rejection or adherence to liberal humanism.

The Cartesian split or mind/body dualism at the root of humanist thought "equates self with only the mind and ignores the relevance and specificity of embodiment" (Vint

11). In this view, "the body— abject, material, immanent, and vulnerable—is that which forces us to recall our own limitations", which makes us "mortal and weak" (Vint 183, 10). As Vint explains, this "dualism is used to justify the exploitation of the material world and all those entities—which historically have included women and non-whites—who are deemed part of this 'natural' world of immanence rather than the cultural world of transcendent mind" (10). Since subjectivity is equated with the mind, then, embodied subjects are deemed unable to achieve the subject status (Vint 89).

This privileging of the mind is reproduced by Transhumanist thinkers, who believe that "a certain level of technological development will enable humans to escape the material consequences of life on earth as embodied beings" (Vint 179). As Vint continues to expound, there is a tendency in transhumanist thought to think of the body "as an obsolete relic, no longer necessary in a world of virtual communication and technological augmentation" (8). The privileging of the mind, "the informational pattern", over the body, its "material instantiation", makes embodiment seem "an accident of history rather than an inevitability of life" (Hayles *How* 2). This is illustrated by the attempt of certain transhumanists, namely cybernetic posthumanists, to render embodiment obsolete by uploading human minds onto computer hardware (Vint 9).

Critical posthumanism radically rejects the inheritance of Cartesian dualism, and advocates instead for placing emphasis on embodiment and an intersectional perspective that takes into account factors such as race, age and class (Braidotti *Posthuman Knowledge* 52). This view, dubbed by Braidotti as "materialist immanence" (43), is fleshed out by Hayles as follows:

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. (*How* 5)

If transhumanism shares the humanist principle of achieving equality by erasing bodily specificity, critical posthumanism champions "an ethically responsible model of embodied posthuman subjectivity which enlarges rather than decreases the range of bodies and subjects that matter" (Vint 190). This stance can be traced back to one of the forerunners of posthuman thought: materialist feminist theories such as Donna Haraway's situated knowledge (Haraway) or Adrienne Rich's politics of location (Rich).

Drawing from all these ideas, Hayles calls in her groundbreaking work *How We Became Posthuman* for the need for "competing, contingent, embodied narratives about scientific developments" (22) that contest transhumanist conceptions of the posthuman. This leads us to the analysis of *The Answers* as a critical literary take on profit-oriented transhumanist discourses in the context of the Fourth Industrial Revolution.

3. TRANSHUMANIST DISCOURSE IN THE NOVEL.

Part One of *The Answers*, narrated by Mary's autodiegetic voice, revolves around her incorporation into the Girlfriend Experiment (GX), an innovative research project "*at the forefront of the creation of truly innovative technological solutions to emotional and psychological problems*" (Lacey 110, emphasis in the original). Plagued by her mounting debts, Mary contacts an advertisement promoting a "*high-paying, low-time commitment [...] income-generating experience*" (Lacey 28, emphasis in the original)

and goes through a series of exhaustive, enigmatic interviews on her educational and familial background, her knowledge of popular culture, her views on romantic relationships, etc. When she is finally selected, Kurt Sky's personal assistant Matheson makes her sign a strict nondisclosure agreement and introduces her to the GX's plan to "*assign the roles fulfilled by a life partner to a team of specialized team members to enact Relational Experiments meant to illuminate the inner workings of love and companionship*" (Lacey 66, emphasis in the original). After unveiling Kurt's involvement in the project, Matheson moves on to enumerate the responsibilities of the Emotional Girlfriend, among them being fluent in the "*guidelines, expectations, and protocols outlined in the Emotional Girlfriend Handbook*", "*listening to Kurt [...] remaining fully engaged [...] affirming his opinions*", "*sending texts*", and pretending that she has "*fallen in love more quickly with Kurt than with anyone else in your life*" (Lacey 67, emphasis in the original).

As presented in Part One of *The Answers*, the goals of the GX can be read in line with the transhumanist aim of transcending "human form and human limitations by means of science and technology" (More "Philosophy" 3), particularly in its endorsement of evolving past our current human state and of dislodging emotions from our material body.

3.1. Transcending the human: "We are not done evolving".

The scientists of the GX's Research Team conceive our current humanity as a transitional, improvable stage of our evolution, and believe that the breakthroughs achieved by their experiment will be a catalyst for the next phase in our emotional development. These ideas are clearly exposed by Matheson when introducing the GX to the applicants:

Well, it's in the fact that our project is also concerned with evolution—emotional evolution—specifically the development of a more honest, nuanced view of human pair-bond selection, behavior, and maintenance. [...] Basically, he continued, our bodies evolved from animal to human. We evolved from nomadic tribes into structured civilizations and now we are continuing to evolve, to make the human experience a more harmonious thing. (Lacey 46, emphasis in the original)

In the case of the GX, human limitations are equated with our tendency to establish romantic bonds and the vulnerability they necessarily imply. More concretely, this research seeks to extend human emotional capacities by artificially reproducing limerence, "the psychological and physiological state of a body as it falls in love" (Lacey 109):

What we are trying to research here is the physiology of that sort of emotional equilibrium. What is happening within the brains of a truly happy couple? [...] Are there habits and practices that could actually create this contentment from the inside? [...] And what does it mean if a person is continually trying and failing to reach this sort of emotional steadiness with one person? [...] Might there be a kind of technological, therapeutic, and/or medical solution for those who continually try and fail to find contentment in a romantic pair bond? (Lacey 46, emphasis in the original)

Once the GX is completed, its results are harnessed into the creation of Identity Distance Therapy, the brainchild of *Kurt Sky Technology Company*. Its advertisement, with which Mary comes across by chance while listening to the radio in the final chapter of the book, denies that romantic frustration is unavoidably part of the human experience, and promises to do away with it as the next stage of our emotional evolution:

—Some might say that romantic frustration is just part of the human condition, that it's an inescapable problem we all must deal with—but polio used to be an inescapable part of being a human and we no longer deal with that. [...] We evolve emotionally just as we evolve physically and we are not done evolving. This is the next—. (Lacey 289, emphasis in the original)

3.2. Disembodying limerence: "A total dissolve of the self".

Besides their effort to outdo human limitations, the GX lines up with transhumanist tenets in its understanding of feelings as something that can be extricated from the body, their material instantiation.

In her discussion of the relation between transhumanism and the pursuit of happiness, Tirosh-Samuelsan argues that the advent of brain sciences has given rise to a "materialistic and reductionist" approach to happiness, equating human emotion with "chemical messengers, neurotransmitters, and neuromodulators" (15). This reductionist discourse is appropriated by the GX's researchers in the novel, as illustrated by statements such as: *"Feelings and emotions are not mysterious. They are merely attempts to respond rationally to an uncertain world, a series of neurochemical*

reactions that can be analyzed and traced back to their origins" (Lacey 136, emphasis in the original).

Paradoxically, this materialist conception of emotions engenders the GX's transhumanist attempt to disembody or disconnect limerence from human nature and reproduce it by means of technology, reminiscent of the project of "uploading the mind" within cybernetic posthumanism. After Kurt espouses Mary's definition of a romantic relationship between two people as "*a compromise for only getting to be one person*" (Lacey 228, emphasis in the original), the Research Team sets out to imitate this "dissolve of the self" while in love by artificial means. This results in the final invention of Identity Distance Therapy,

a system of highly advanced wearable biotechnology that changes a user's brain activity and bodily sensations to create a virtual reality experience so complete that users report a total dissolve of the self, a transcendence so profound that one believes, completely, that they are another person. (Lacey 288, emphasis in the original)

Thus, the GX views the vulnerability inextricable to romantic relationships as an avoidable shortcoming of human experience, and seeks to transcend it by severing limerence from the body. In this, the aims and procedures of Kurt and the Research Team are completely attuned with transhumanist premises of leaving the body behind.

4. THE NOVEL'S CRITICAL POSTHUMANIST DENUNCIATION.

If in Part One of the novel Mary narrates her admission into the GX, Part Two accounts for the development of the GX's Relational Experiments and the gradual unveiling of its

unethical and crippling practices. In its depiction of the experiment's progress, *The Answers* notably sides with the principles of critical posthumanism, namely through its critique of the unhindered use of technology bolstered by neo-humanist and neoliberal transhumanist notions. The novel's condemnation arises primarily from the depiction of the traumatic effects of the experiment upon the Girlfriends, informed by anti-capitalist, antihumanist and feminist concerns.

In formal terms, Part Two moves from Mary's autodiegetic narration to a polyphonic heterodiegetic narration that shifts disjointedly between the focalization of different characters—namely the Girlfriends, the researchers, Kurt, and Matheson—, sometimes several times in a single chapter. This access to various perspectives multiplies the scope of the novel's denunciation beyond Mary's individual experience. While the Girlfriends' outlook exposes the traumatogenic effects of the GX' experimentation and how they were compelled to enroll in it by economic need, Kurt's focalization reveals his ego-driven intentions, sanctioned by his fortune and success. Furthermore, the accounts of these different focalizers are often non-linear, returning to significant or traumatic episodes of their lives in analepses that disrupt the otherwise chronological arrangement of the plot. This motivates a reading of the novel in line with the characteristics of trauma fiction, which would underscore its critique of the detrimental aftermath of unrestrained technology.

In turn, Part Three of the novel, spanning over the last 38 pages, returns to Mary's autodiegetic narration. Plotwise, it corresponds with Mary's discharge from the GX after the violent accident between her, Kurt, and Ashley, the Anger Girlfriend. This section furthers the novel's denunciation by depicting Mary's perception of Ashley's demented state after being subjected to Internal Directives, and also her discovery that the GX's findings have been used to produce the film *The Walk* and Identity Distance Therapy.

These circumstances trigger Mary's final retreat from our tech- and media-saturated society, a decision that stands as the epitome of the novel's call for embodied, vulnerable human experience, countering the profit-driven transhumanist workings of Kurt and the GX.

4.1. Technology and trauma: "I don't know what I am".

One of the major targets of criticism of the novel is the Research Team's unethical use of technology, which exerts traumatogenic effects upon the Girlfriends' mental and emotional wellbeing. The GX is morally dubious and neglectful of science's basic ethical guidelines in multiple aspects: the Girlfriends are forced to sign strict nondisclosure agreements, have no knowledge about the end use of their data and only come across it by chance, and must engage in distressing Relational Experiments, such as reenacting the last hours of Kurt's late mother to study his reaction. The most questionable aspect of the Experiment, however, is the use of Internal Directives, a quantum leap in neuroscience that goes beyond "*merely recording the bio-information of a body wearing the sensors*", and allows the researchers "*to transfer information into the body, telling it how to behave*" (Lacey 146, emphasis in the original).

Oblivious to one of the researchers' fears that "perhaps the Internal Directives were flatly unethical, that perhaps the means did not justify the [end]", Kurt and the majority of the scientists feel "no concern or worry" about ethical and safety concerns, not even about the integrity of "*using such a technology on those who are not aware*" (Lacey 204, 148, emphasis in the original). Nevertheless, as they began to test the Directives on the Girlfriends—always without their knowledge or consent—researchers start to grow hesitant. This is particularly so after the "Jenny Incident": Jenny, one of the members of the Intimacy Team, becomes deranged after being "*brainwashed*" (Lacey 202, emphasis

in the original) into synthesizing limerence, and is fired on the spot with no regard for her welfare. Following this accident, the Research Team turns to subtler experiments, but the traumatic disturbance forced upon the Girlfriends seems to be irreversible.

The main exponent of the aftermath of the unscrupulous use of Internal Directives is Ashley, the Anger Girlfriend, who becomes highly violent and unstable after being subject to the experiments. The Directives have a shattering effect on her mental and emotional state, and she admits that "though the Internal Directives were synthetic, even a synthetic love, it seemed, had made her a monster" (Lacey 207). After unearthing some of the secrets of the GX, she has several violent confrontations with Kurt. When a particularly vicious attack sends Kurt to the E.R., Ashley is discharged from the GX. Nonetheless, she is still deeply unstable, and chases Mary to collect information about Kurt's whereabouts. Her conversation with Mary in one of these meetings perfectly illustrates her erratic mental state and mutilated sense of identity, scarred and distorted by the unrestricted tests of the Research Team:

She started ranting, going on about a conspiracy, something they were doing with the surveillance tapes, something about the sensors and what they had done to all of us, that it was abuse, that they'd been controlling her mind, that she didn't even know herself anymore, that she was mush, that she had been ripped apart.

I don't know what I am, she said, I don't know what feelings are mine anymore.

(Lacey 279, emphasis in the original)

Significantly, the experiment's mental and emotional repercussions are translated onto the formal features of the narrative. As this dissertation has already argued, the

shifting focalization on the Girlfriend's experience in Part Two allows the novel to portray the crippling effects of the GX's practices. The characters' non-linear and multiple accounts, together with the proliferation of analepses and the recurrent comeback of disturbing episodes of their lives, can be read in line with "the prevalence of repetition, indirection and the dispersal of narrative voice" that Whitehead designates as distinctive of works of trauma fiction (161). Although the presence of elements of trauma narratives can also be accounted for by Mary's experience of domestic violence, parental abandonment, and general dislocation, as well as by the various forms of sexual abuse suffered by most of the Girlfriends, the novel's formal characteristics underscore its denunciation of the traumatic effects of unbridled technological experimentation.

Further developing its critical portrayal of the harrowing effects of technology, the aftereffects of mass and social media surveillance take center stage in the novel. This criticism is first voiced by Matheson in Part One, as he describes the dehumanizing consequences of Kurt's constant exposure to public scrutiny:

Mary, we live in very strange times. Knowledge is always second to data—big data, data as a form of war. [...] The American concept of celebrity has developed and become deformed in tandem with the rise of the information age. The paparazzi are now everywhere because anyone can be one with nothing more than a cell phone. What used to just be in Us Weekly is now on every corner of the Internet, constantly dehumanizing many of our most emotionally intelligent and talented members of society. [...] There's a pervasive and inescapable surveillance of his public activities that is shared continuously online. [...] As you can imagine, this creates an over-awareness of the self, even in the most resilient people. [...] All this privacy is sacrificed

already, and anything he intentionally tries to keep private is hounded all the more for it. Can you imagine what this might do to a person? (Lacey 41-43, emphasis in the original)

The novel, then, condemns the disrupting effects that constant media exposure can have over one's identity and relations. Again, this aspect of the novel's criticism is enhanced by formal features. The ills of this media-dominated panorama are underscored by Mary's alien perspective to them as "a homeschooled semi-orphan from a barely literate state", so estranged from pop culture in her early years that she "made it to eighteen without even hearing of Michael Jackson" (Lacey 18). As someone who never reads any websites or magazines nor watches any movies or TV shows because she "never gained the skill or desire" to do it, uses a computer only at work, and has a landline rather than a smartphone (Lacey 31), Mary is completely cut off from the world of mass media that alienates Kurt. Booker points out that defamiliarization is "the principal technique of dystopian fiction", employed to "provide fresh perspectives on problematic social and political practices that might otherwise be [...] considered natural and inevitable" (19). In keeping with this idea, *The Answers* deploys Mary's defamiliarizing perspective on the ubiquitous presence of technology, mass media and social surveillance to advance its warning against their potentially damaging effects. Indeed, by the end of the novel Mary lets her company phone die, affirming that "people think you need them but you don't" (Lacey 290), and shuts herself up in her apartment, renouncing to the hi-tech culture that has proven harmful and traumatizing throughout the novel.

4.2. Technology and capitalism: "The problem was money".

If *The Answers*' target of criticism is chiefly the derisive effects of the unbounded use of technology, the novel also constantly points towards the conflation between unscrupulous technological evolution and the profit-oriented capitalist mentality, which systematically preys on the weaker members of society and leaves scientific progress in the hands of the wealthy few that can sponsor it. This denunciation is thoroughly aligned with the posthumanist highlighting of the "socioeconomic dynamics beyond the individual" that are often disregarded by human enhancement advocates (Hayles "Wrestling" 3).

Throughout the novel, it is made clear that, rather than being "*a state-of-the-art inquiry into some of life's most challenging questions*" (Lacey 33, emphasis in the original), the GX is merely a "vanity project" aimed at feeding the ego of the self-absorbed Kurt (Lacey 201). At the onset of the experiment, Kurt is presented as a victim of "*the constant pressure of being observed and scrutinized*", unable to "*ever really trust someone*" or "*ever safely be in love*" (Lacey 44, emphasis in the original). Following Kurt's conception of celebrities and millionaires as the "*most interesting, talented, and powerful citizens*", the ones that should "*move the human race along*" (Lacey 44, 42, emphasis in the original), the GX is conceived as "*both a scientific experiment for the good of society at large and a healing exercise for Kurt in particular, a sort of recalibration of his understanding of himself in relationship to others*" (Lacey 66, emphasis in the original).

However, as we gain access to Kurt's focalization in Part Two of the novel, his delusional and egotistical character is gradually disclosed:

Kurt wasn't a scientist and would be the first to admit that, but wasn't it sometimes the case in history that those who were not technically scientists—those who were, instead, *visionaries*, let's say—wasn't it sometimes the case that these visionaries predicted a scientific fact centuries before these facts could be scientifically proven? [...] Anyway, Kurt wasn't saying—to himself or to anyone else—that he was da Vinci or anything, but he did have this hunch that people had been missing some key element of romantic love. (Lacey 137, emphasis in the original)

Shielded by his fortune and the generous checks he pays to the Girlfriends, Kurt does not hesitate to put those at his service through humiliating experiences, such as having the Girlfriends stood up in public spaces just for the pleasure of "watching a woman reject the company of another man for the pointed absence of his" (Lacey 200). Whenever one of the women threatens his feeling of masculine superiority, she is immediately let go from the project. This is the case of the Intellectual Girlfriend, whom he deems "perhaps was too intellectual" because she looks at him with "always a yawn in her eyes" (Lacey 176). Moreover, as the plot unfolds it is uncovered that he has used the GX's recordings for his feature *The Walk*, thus violating the Girlfriends' privacy without their knowledge. In short, the GX is depicted as a self-interest project seeking only Kurt's advancement, but disguised as a scientific endeavor for the common good. This delusion is enabled by the limitless power and influence granted by contemporary capitalism to moguls like Kurt, who are left to freely take advantage of society's underdogs. Significantly, the members of the Research Team believe both Kurt and Matheson to be "a little sociopathic, but only a few thought this was a problem" (Lacey 204).

If money is the factor enabling Kurt to dispose of a whole team of researchers, Girlfriends, and assistants as he likes, money is also the motif pushing the Girlfriends to enroll in the GX's "*income-generating experience*" (Lacey 28, emphasis in the original). *The Answers* denounces how the most impoverished members of society can be forced to comply with immoral or degrading practices because of their economic situation. This is the case of Mary, burdened by the debt accumulated while trying to obtain a diagnosis for her mysterious illness in the American private healthcare; but also of the other Girlfriends, who are pressed by "their rents, their debts, their ailing parents, their families and their constant bills, tuitions, payment plans, groceries, all those endless appetites" (Lacey 95). Although they all enter the experiment of their own accord, they are pushed by economic, social, and gender factors that leave them no option but to accept being exploited by the GX. This lack of choice is clearly illustrated by Mary's account in the opening pages of the novel, reminiscent of a confession narrative:

I'd run out of options. That's how these things usually happen, how a person ends up placing all her last hopes on a stranger, hoping that whatever that stranger might do to her would be the thing she needed done to her. [...] The problem was, as always, an invisible one. The problem was money. [...] It was a few days later that answering that ad for an *income-generating experience* tacked to a bulletin board at a health food store seemed like my only real option. (Lacey 7-9, emphasis in the original)

By juxtaposing Kurt's unlimited power and the Girlfriends' restricted freedom, the novel comments on one of the issues at the core of debates about the Fourth Industrial Revolution: the risk of "exacerbated inequality" (Schwab 16). As Schwab notes, "the

great beneficiaries of the fourth industrial revolution are the providers of intellectual or physical capital [...] which explains the rising gap in wealth between those who depend on their labor and those who own capital" (16). This soaring inequality may result in a "winner-takes-all market economy", where the winners "may even benefit from some form of radical human improvement [...] from which the losers will be deprived" (88). This position sides with the critical posthumanist denunciation advanced in the theoretical framework of this dissertation, which condemns transhumanists as "champions of the Capitalocene" (Braidotti *Posthuman Knowledge* 63) who focus only on the theoretically transgressive aspects of technological advance and disregard the material economic and social factors intertwined with it. By depicting the unequal access to enhancement technologies, the novel stands as a warning against "the violence of social inequalities" (Braidotti *Posthuman Knowledge* 36) ultimately arising from a transhumanist conception of scientific development.

4.3. Technology and (dis)embodiment: "Having a body doesn't give you any rights at all".

In its discussion of transhumanist discourses in *The Answers*, this dissertation has argued that both transhumanism and its spokesmen in the novel adhere to the humanist privileging of the mind, and seek "to escape the material consequences of life on earth as embodied beings" (Vint 179), specifically the emotional vulnerability inherent to human relationships. Defying this stance, *The Answers* places emphasis on physicality and embodiment, particularly in the Girlfriends' bodies, conforming with the "materialist immanence" defended by posthumanist theorists as Braidotti (*Posthuman Knowledge* 43).

In an interview with *The Paris Review*, Lacey comments on the wish to do away with the body shared by transhumanist thinkers:

When I'm writing, I am very much thinking of the body [...] and I don't think this is necessarily a very modern concern—I do think there's this very human, ongoing problem of people being dissociated from their own bodies. So sometimes work that addresses the intricacies of what is happening in a body and the way that it relates to our thoughts, the way it relates to the way we see the world, seems kind of familiar and unfamiliar at the same time. Beneath our lives there is the physical rhythm of our existence, and yet so much of the time we are trying to ignore it. [...] We want to ignore it, because it would be too upsetting to acknowledge the sort of temporary bloody mess that is your life.
(Lacey in Traps)

The attempt to dislodge the mind from the body addressed by Lacey in this interview is systematically dismantled in the novel. The utmost instance of the monistic understanding of mind and body are Mary's painful symptoms, which include "tenacious headaches, back pain, a constantly upset stomach, [...] persistent dry mouth and a numb tongue, a full-body rash" (Lacey 9). The source of the pain, as his PAKing therapist discloses, is that Mary's "*pneuma is in a state of chaos and stress*", and this agitation "*has gone unchecked for so long that it has been translated into the physical language of your body*" (Lacey 24, emphasis in the original). The fact that the root of Mary's symptoms is "*deeply embedded and intertwined*" with her nonphysical self (Lacey 24, emphasis in the original) refutes the dislodgment of mind and body proposed by both transhumanists and the Research Team in the novel. If the mind and the body

cannot be dissociated, then limerence cannot be produced in a synthetic, disembodied vacuum, as promised by Identity Distance Therapy.

An additional aspect of the novel's posthuman rejection of disembodiment is its staging of how the embodied, disadvantaged members of society become, as Braidotti claims in *The Posthuman*, "the disposable bodies of the global economy" (111). As women left with little option but to yield to Kurt's disreputable demands, the Girlfriends become a flesh-and-bone instance of the commodification of life under advanced capitalism. Following the classical humanist notions embraced by transhumanism, the girlfriends are associated with the "abject, material, immanent, and vulnerable" (Vint 183) side of human nature, opposed to the ideal of the Vitruvian Man of the Enlightenment as "the measure of all things", which would be illustrated by Kurt. Because they are considered inferior to the "ideal", the Girlfriends are subject to biopiracy and abuse: their data, images and emotions are mined and manipulated without their knowledge. This posthuman denunciation of the dualistic heritage and its aftermath for embodied subjects is rightly encapsulated in Mary's reflection: "Having a body doesn't give you any rights at all" (Lacey 17).

The abuse of the female body legitimized by the humanist legacy is not restrained to the biopiracy of the Girlfriends data by the GX, but is ubiquitous in the universe of *The Answers*. This allows Lacey to extend her feminist critique to a scope beyond the technological. In an interview to *The Paris Review*, she concedes that her novel foregrounds "the female body and how it's perceived and viewed and used in modern society [...] the emotional labor that women do, the physical labor in relationships that they do, or historically have had to do" (Lacey in Traps). Indeed, the novel puts forward a fierce denunciation of the multifaceted abuse women are subjected to nowadays: Mary's mother was a target of domestic violence, Mary herself a victim of rape, Ashley

endures long-life harassment and sexual assault, the Mundanity Girlfriend Poppy suffers violence at the hands of her spouse, etc. Again, this feminist critique lines up with the rebuke of the Enlightened construction of women as a subordinate, exploitable other at the core of critical posthumanism.

The novel, then, puts forth an outright refusal of the humanist dualistic heritage by placing the spotlight on the indivisibility of body and mind, and the catastrophic consequences of the construction of the embodied Other—in this case, women—as inferior. Because of its emphasis on the pernicious aftermath of technology if developed along the line of transhumanist tenets, *The Answers* stands as an "embodied narrative about scientific developments" as the ones Hayles advocated for (*How* 22), one that discards the transhumanist wish to overcome the limits of physicality and vindicates embodiment and vulnerability as an inextricable part of the human experience. This vindication of life and humanity, of vulnerability and embodied experience, is the call with which Lacey puts an end to her novel:

People changed. I changed.

And isn't that enough for us? And who put all this fear in us, this fear of changing when all we ever do is change? Why is it so many want to sleep through it all, sleepwalk, sleep-live, feel nothing, eyes shut? Haven't we slept enough? Can't we all wake up now, here, in this warm valley between cold mountains of sleep? (291, emphasis in the original)

5. CONCLUSION.

This dissertation has analyzed the ways in which Catherine Lacey's novel *The Answers* dismantles the transhumanist notion of human enhancement by exposing the

GX's traumatic outcome, its links with neo-liberal capitalism and rising inequality, and its continuation of the biased Enlightened understandings of the human and the human body. By putting forward a warning against the potential aftermath of technological and scientific development conducted along transhumanist tenets, *The Answers* sides with the arguments of critical posthumanism and engages with contemporary debates about human enhancement in the context of the Fourth Industrial Revolution, endorsing Klaus Schwab's demand for social and collective responsibility:

Technology is not an exogenous force over which we have no control. [...] The more we think about how to harness the technology revolution, the more we will examine ourselves and the underlying social models that these technologies embody and enable, and the more we will have an opportunity to shape the revolution in a manner that improves the state of the world. (9)

As a literary take on present or near-at-hand anxieties about science, technology, and advanced capitalism, then, *The Answers* can be ascribed to what Booker dubs "the modern turn to dystopian fiction" triggered by "perceived inadequacies in existing social and political systems" (20), together with other contemporary American works such as Richard Powers's *Generosity: An Enhancement* (2009), Dave Egger's *The Circle* (2013) and Don DeLillo's *Zero K* (2016). Written and set at the inception of the Fourth Industrial Revolution, Lacey's *The Answers* stands as a cautionary tale about our society's foreseeable future if unrestricted technological development along transhumanist, neoliberal lines carries through.

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