

NARRATING THE FOURTH INDUSTRIAL REVOLUTION: TRANSHUMANISM AND CRITICAL POSTHUMANISM IN CATHERINE LACEY'S *THE ANSWERS*.

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ABSTRACT: Recent scientific breakthroughs under the wing of the Fourth Industrial Revolution, particularly in the realm of biotechnology, have prompted an integral redefinition of the human, looking toward the posthuman state. Stances on this question range from the transhumanists' advocacy of overcoming biological limits, to the indexing of technoscientific advancement to an antihumanist and postanthropocentric project championed by critical posthumanism. These debates have been translated into speculative fiction works such as Catherine Lacey's *The Answers* (2017). This novel revolves around the Girlfriend Experiment, a state-of-the-art research project aimed at taking the next step in our emotional evolution by eliminating the need for romantic relationships, bankrolled by a film industry mogul. This paper analyses the representation of human enhancement in the novel, arguing that the depiction of the material consequences of the experiment upon its research subjects amounts to a rejection of the unrestricted development of technology along transhumanist and neoliberal tenets. In this, *The Answers* offers a critical take on the Fourth Industrial Revolution aligned with the principles of critical posthumanism.

RESUMEN: Los avances científicos al amparo de la Cuarta Revolución Industrial, sobre todo en el campo de la biotecnología, han impulsado una redefinición integral de la humanidad, con la mirada puesta en lo posthumano. Existen diferentes posturas sobre

esta cuestión, yendo desde la apuesta por dejar atrás nuestros límites biológicos del pensamiento transhumanista, hasta la apuesta antihumanista y postantropocentrista del posthumanismo crítico. Estos debates se han trasladado a obras de ficción especulativa como *Las respuestas* (2017), una novela de Catherine Lacey. Ésta narra el “Experimento Novia”, un proyecto de vanguardia financiado por un magnate del cine, que busca dar un paso adelante en nuestra evolución emocional eliminando la necesidad de establecer relaciones románticas. Este artículo analiza la representación del perfeccionamiento humano en la novela, argumentando que el retrato de las consecuencias materiales de este experimento sobre sus sujetos de investigación supone un rechazo del desarrollo tecnológico de acuerdo con el pensamiento transhumanista y neoliberal. En este sentido, *Las respuestas* ofrece una visión crítica de la Cuarta Revolución Industrial en sintonía con el posthumanismo crítico.

INTRODUCTION.

Klaus Schwab, the founder of the World Economic Forum, claims that the scientific advances at the turn of the twenty-first century have ushered in a “fourth industrial revolution” (12), based on the integration of disciplines such as artificial intelligence and gene sequencing across the biological and digital realms. This revolution, notable for its “size, speed and scope,” is bound to bring about “unprecedented paradigm shifts in the economy, business, society, and individual in ways that were previously the preserve of science fiction” (Schwab 8, 93).

Technological breakthroughs under the wing of the Fourth Industrial Revolution, particularly in the fields of human enhancement and biotechnology, could reach the extent of prompting an integral redefinition of the human, moving toward a potential posthuman stage. This transition has sparked off intense ethical debates, with stances ranging from the opposition to the modification of nature on the grounds that it would “undermine human dignity” (Bostrom “Defense” 203) heralded by bioconservatist thinkers such 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 belief that that these technologies hold “enormous potential for valuable and humanly beneficial uses,” and will ultimately turn us

into “posthuman beings with indefinite health-spans, greater intellectual faculties and the ability to control their own emotions” held by champions of transhumanism (Bostrom “Defense” 203). Rejecting these technophobic and apologist standpoints on human enhancement, the work of critical posthumanist theorists such as Katherine Hayles, Rosi Braidotti or Sherryl Vint sides with Donna Haraway’s binary-breaking cyborg, proposing to leverage the liberatory potential of technology to overcome the legacy of humanism and anthropocentrism.

These debates on human enhancement have translated into literature, particularly in the field of speculative fiction, which Vint declares “a space of vernacular theorization” able to grapple with the new subjects and ethics of the posthuman zeitgeist by instantiating them in narrative (“Speculative Fiction” 220). The genre’s dialectical exchange with reality, Vint contends, can be mobilized to endorse specific directions for current technoscientific development, and thus can help us “envision and materialize alternative futures that seek to transform rather than intensify contemporary injustices” (*Biopolitical Futures* 8). In line with Vint’s approach to speculative fiction, this paper seeks to analyze *The Answers* (2017), a novel by the American author Catherine Lacey, under the light of current arguments on human enhancement.

The Answers, a work that has been described as “genre-blending” and “flirting with science fiction” (Rappis), narrates how Mary, a young woman plagued by a mysterious illness, enrolls on an cryptic “income-generating experience” to be able to afford therapy and settle her medical debt (Lacey 28). She becomes involved in the Girlfriend Experiment (GX), a research project aimed at taking the next step in our “emotional evolution” through the development of a “technological, therapeutic or medical solution for those who continually try and fail to find contentment in a romantic pair bond” (Lacey 46), bankrolled by the uber-famous actor-filmmaker Kurt Sky. After a series of secretive interviews, the selected women are assigned the roles usually fulfilled by a romantic partner—“a lover, a best friend, a nurturer, an intellectual equal, an oblique replacement for a lost or failed parent” (Lacey 46)—and asked to perform a series of Relational Experiments, role-playing sessions that allow the Research Division to track the physiological workings of love. 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, while the unethical, damaging effects of the experiment are disclosed. Mary is relieved from of her role as Emotional Girlfriend after a violent accident with Ashley, the Anger Girlfriend, who has become manic due to the Research Team's unscrupulous tests. By the end of the novel, it is revealed that the GX's recordings—unbeknownst to the Girlfriends—have been collected to produce Kurt's *magnum opus*, the film *The Walk*, and their biological data harnessed to launch Identity Distance Therapy, a wearable device that promises to suppress the human need for romantic connection.

Lacey's portrayal of the Girlfriend Experiment, this paper will argue, exposes the limitations of the transhumanist ambition of transcending embodiment, and denounces the indexing of technoscientific development to neohumanist and neoliberal discourses by exposing its aftermath on its othered, gendered research subjects. This call for leaving behind the exclusionary rhetoric of (trans)humanism toward a more embodied, affective, and vulnerable subjectivity motivates a reading of *The Answers* as a narrative intervention in the posthuman question that sides with the principles of critical posthumanism.

DEBATES ON THE POSTHUMAN: TRANSHUMANISM, CRITICAL POSTHUMANISM AND (DIS)EMBODIMENT.

The preeminent transhumanist thinker Max More defines this 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 the “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 promotes the radical extension of human capabilities in a perpetual progress toward the posthuman state.

Transhumanism as defined above took form in the latter part of the twentieth century, crystallized 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 More's “Transhumanism: Toward a Futurist Philosophy.” As More explains, 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), appointing current innovations in biotechnology and life sciences as the main means to achieve this advancement.

As famously traced in Katherine Hayles’ *How We Became Posthuman*, the transhumanist adoption of these tenets extends to reproducing the mind/body dualism at the root of humanist thought. The Cartesian split equates self only with the rational mind and ignores the relevance and specificity of embodiment, which is in turn constructed as “abject, material, immanent, and vulnerable—that which forces us to recall our own limitations,” that which makes us “mortal and weak” (Vint *Bodies of Tomorrow* 183). This privileging of the mind is upheld by transhumanist thinkers, who aim to escape the material consequences of life as embodied beings through technological augmentation. As Hayles expounds, discourses driving the development of cybernetics and informatics in the twentieth century privileged the mind, “the informational pattern,” over the body, its “material instantiation,” thus making embodiment seem “an accident of history rather than an inevitability of life” (*How* 2). In this view, the body is rendered a prosthesis to discard and manipulate at will, a perspective best illustrated by the common transhumanist fantasy to render embodiment and mortality obsolete through mind uploading.

Transhumanist thought has been met with opposition for two reasons. First, that the posthuman state may be degrading for human dignity, a position adopted by bioconservatist thinkers such as Sandel, Fukuyama or Rifkin. In addition, and despite transhumanists’ insistence that wide access to scientific advancements will lessen social inequality, encourage tolerance and understanding (Bostrom “Values” 11), or even end world hunger and reverse environmental destruction (Kurzweil 181, 290); reasonable doubts about the social consequences of human enhancement have been voiced by theorists associated with critical posthumanism. The latter condemn the movement’s links with private enterprise and the corporate world and claim that technology developed along transhumanist lines may exacerbate “issues of egalitarian access to advanced technologies, the violence of social inequalities, massive job suppressions and the on-going depletion of Earth resources” (Braidotti *Posthuman Knowledge* 36).

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 human’s co-evolution with technological progress. Notwithstanding these common concerns, posthumanism radically diverts from transhumanist thought, which, in Braidotti’s words, engenders “a perverse form of the posthuman” through its adherence to the humanist legacy and its alliances with advanced capitalism (*The Posthuman* 7). As a counterpoint to the shortcomings of current scientific discourses, critical posthumanism seeks to harness the transition to the posthuman stage to spark a political and philosophical reconceptualization, based upon the principles of antihumanism and postanthropocentrism.

In her monograph *The Posthuman*, Braidotti exposes the rationale behind the movement’s rejection of the humanist legacy:

At the start of it all there is He: the classical ideal of ‘Man’. An ideal of bodily perfection which doubles up as a set of mental, discursive and spiritual values. Together they uphold a specific view of what is ‘human’ about humanity. Moreover, they assert with unshakable certainty the almost boundless capacity of humans to pursue their individual and collective perfectibility. This paradigm implies the dialectics of self and other, and the binary logic of identity and otherness as respectively the motor for and the cultural logic of universal Humanism. Central to this posture is the notion of ‘difference’ as pejoration. 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)

This dialectic of negative difference works in collusion with profit-driven capitalism, as it justifies the exploitation and commodification of those deemed “less than human.” Critical posthumanist thinkers state that capital dynamics under the Fourth Industrial Revolution commodify Life itself, as biological processes—gestation, stem cell production, tissue engineering—become annexed to capitalist processes of accumulation and are transformed into a means for generating surplus (Cooper). In this scenario, the

“disposable bodies” of Humanism are “reduced to carriers of vital information, invested with financial value and capitalized” (Braidotti *The Posthuman* 117), forced to serve the “directly embodied debt peonage” that lurks behind the promises of technoscientific advancement (Cooper 150).

Rejecting the indexing of technoscientific development to neohumanist and neoliberal precepts, critical posthumanism advocates for discarding the legacy of Cartesian dualism and redefining humanity as inextricably embedded, embodied and relational (Braidotti *Posthuman Knowledge* 67). Against transhumanist fantasies of transcendence and imperviousness, critical posthumanism states that all creatures, as embodied beings, are “intertwined with the dynamic, material world, which crosses through them, transforms them, and is transformed by them” along a nature-culture continuum that includes human, natural and technological others (Alaimo 435). This vitalist, monistic conception of life provides the blueprint for more egalitarian social, political, and ethical models, ones able to eschew the pitfalls of negative difference and individualism.

These conflicting standpoints on the transition to the posthuman stage figure large in Lacey's *The Answers*, which maps both the transhumanist wish to transcend embodiment and the dire consequences of this ambition for the othered subjects on whose bodies it is purchased.

“WE ARE NOT DONE EVOLVING”: TRANSHUMANIST FANTASIES IN *THE ANSWERS*.

Part One of *The Answers*, narrated by Mary's autodiegetic voice, revolves around her incorporation to the Girlfriend Experiment (GX), a research project “at the forefront of the creation of truly innovative technological solutions to emotional and psychological problems” (Lacey 110). Pressed by “the onslaught of medical bills” collected searching for a diagnosis (Lacey 9), Mary contacts an advertisement promoting a “high-paying, low-time commitment income-generating experience” (Lacey 28). She goes through a series of thorough background checks involving the collection of her biometrics and interviews about her educational and familial background, her knowledge of popular culture, her views on romantic relationships, etc. After committing to a strict nondisclosure agreement, she is

designated the experiment's Emotional Girlfriend—the most crucial role—and introduced to the plan and purposes of the GX, which is presented as “a state-of-the-art inquiry into some of life's most challenging questions” (Lacey 33). Matheson, personal assistant to the experiment's patron Kurt Sky, describes the motivation of the experiment as follows:

In the greater context of human history, wealth and power have been indications that a person has secured excess resources for survival. The wealthy and powerful should therefore be nodes of philanthropy and evolution, the ones who move us, as a species, forward with thought and generosity. However, 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. The value we have placed on superficial knowledge of the personal lives of our celebrities is quickly creating a sort of emotional vacuum for many respected, talented, wealthy, and otherwise evolved individuals. [Kurt's] ability to connect deeply and intimately with another person has been compromised by the fact that anyone he meets feels as if they already know him. How does he find meaningful human connection in a world of people who falsely believe they are already connected to him? How does he make friends who don't just want to ride his coattails toward their own fame? How can he ever really trust someone, and thus, how could he ever safely be in love? (Lacey 42)

The goal of the experiment, in Matheson's words, is to develop “a nuanced view of human pair-bond selection, behavior, and maintenance,” aimed at finding “a technological, therapeutic and/or medical solution for those who continually try and fail to find contentment in a romantic pair bond” (Lacey 46), which would constitute the next step at humans' emotional evolution.

As presented in Part One of *The Answers*, the goals of the GX can be read in line with transhumanist ambitions of transcending current biological limitations. To begin with, the scientists of the GX's Research Team conceive our present state as a transitional, improvable stage of our evolution, and believe that the findings of their experiment will be a catalyst for the next phase in our emotional development. As the advertisement of Identity Distance Therapy, the brainchild of the GX, puts it:

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. (Lacey 289–290)

In the framework of the research, then, the human need to establish romantic bonds and the vulnerability that relationality necessarily implies stand as a liability, an obsolete weakness that must be overcome by technological means.

As part of their search for “a way out of this terrible cycle” (Lacey 288), the Research Team records the biometrics of the Girlfriends’ bodies as they rehearse relationship routines in the Relational Experiments, attempting to pin down the physiology of limerence, “the psychological and physiological state of a body as it falls in love” (Lacey 109), to be then able to reproduce it artificially. Hence, feelings are understood as informational patterns that can be extricated from the body, their material instantiation. In her discussion of the relation between transhumanism and the pursuit of happiness, Hava Tirosh-Samuels 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 reproduced by the GX’s researchers in the novel, who contend that:

A human system merely responds to the data it is given and creates a set of data as an answer to that data. 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)

Nowhere is this materialist view of feelings more evident than in the concoction of Internal Directives, a cutting-edge technology devised by the Research Division to “transfer information into the body, telling it how to behave,” using electromagnetic pulses to modify the subject’s “Emotional Vulnerability Quotient” (Lacey 146), a formula that quantifies a person’s openness to others by measuring hormones, neurotransmitters, vagal tone, etc. Eventually, Internal Directives give way to the launching of Identity Distance Therapy, a virtual reality device that simulates “a total dissolve of the

self,” thus alleviating “the impossible desire to be another person, the source of so much suffering that we’ve proven to be a primary reason for romantic love” (Lacey 288). In so doing, the offshoot of the GX promises to train the mind “out of these unhelpful habits, unconscious and embedded behaviors,” extricating the vulnerability of relationality from human nature (Lacey 147).

The wish to overcome the need for romantic contentment animating the GX is, in conclusion, fully attuned with the transhumanist conception of human nature as a work in progress, as well as with the movement’s privileging of informational patterns and the mental realm. Indeed, the GX’s quest to dislodge limerence from the body is reminiscent of real-life transhumanist projects to leave materiality behind, such as fantasies of mind uploading or the scheme to reverse-engineer the brain’s biological limitations theorized by Ray Kurzweil in *Singularity is Near*. In parts Two and Three of the novel, the flipside of these transhumanist designs for the embodied subjects on whom they are realized takes center stage.

**“HAVING A BODY DOESN’T GIVE YOU ANY RIGHTS AT ALL”:
THE ANSWERS’ CRITICAL POSTHUMANIST DENUNCIATION.**

If in Part One of *The Answers* 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 practices. In formal terms, Part Two moves from Mary’s autodiegetic narration to a polyphonic, heterodiegetic narration that jumps 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 fatal consequences of the experiment upon its research subjects, plus the material circumstances compelling them to enroll in the experiment, the focalization on Kurt sheds light on his ego-driven, profit-minded intentions. This depiction, it will be argued in what follows, sides with the principles of critical posthumanism in its critique of the development of technology galvanized by neohumanist and neoliberal notions.

The Research Team’s immoral use of technology, as well as its devastating effects upon the Girlfriends’ mental and emotional

wellbeing, are brought into the spotlight as the experiment unfolds. The GX is morally dubious and neglectful of science's ethical ground rules in multiple aspects: the Girlfriends are forced to sign strict nondisclosure agreements, have no knowledge about the end use of their data, and must engage in distressing Relational Experiments, such as reenacting the last hours of Kurt's late mother to study his reaction.

Throughout the experiment, the Girlfriends are subject to constant monitoring and datafication by the Research Division's technologies. Thus, as illustrated by the following passage, they are viewed not as individuals but as anonymized bodies, reduced to banks of biological information and patterns invested with potential economic value:

A dozed dime-size sensors were applied to each woman's body, their chests and bellies, wrists, clavicles, armpits, necks and faces, and as they were activated, the screens in the Research Division's office grew animated, blue and red lines worming and peaking across the graphs. The monitors showed how each woman's heart was flexing blood, lungs pumping, nerves shimmering with electricity, voices and inflections, pores pushing up little smears of sweat, a twitch in the face, the vagus nerve pulsing between brain and chest—a lot of this was tracked, recorded, and archived—a file for each test subject, the analytics already running, looking for patterns, trying to find the logic of each of them. (Lacey 93)

The most questionable aspect of the Experiment, however, is the unscrupulous testing of Internal Directives upon the Girlfriends without their knowledge or consent. 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 Research Division's members feel "no concern or worry" about ethical and safety issues, not even about the integrity of "using such a technology on those who are not aware" (Lacey 204, 148). Nevertheless, as they began to conduct tests with the Directives, 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) into synthezizing limerence in the midst of a Relational Experiment. Jenny is fired on the spot with no regard for her welfare, and the Research Team turns to subtler trials, but the traumatic disturbance forced upon the Girlfriends seems to be irreversible.

The main exponent of the aftermath 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, synthetizing in her a feral obsession rather than limerence. In Ashley's words: "though the Internal Directives were synthetic, even a synthetic love, it seemed, had made her a monster" (Lacey 207). After several violent confrontations with Kurt stemming from jealousy, Ashley is discharged from the GX, but she remains deeply unstable, and harasses Mary to collect information about Kurt's whereabouts. Her conversation with Mary in one of these meetings illustrates her erratic mental state and mutilated sense of identity, the by-product of the Research Team's manipulation of her brain:

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)

Melinda Cooper and Catherine Waldby's concept of "clinical labor" proves a particularly apt lens to consider the Girlfriends' role in the experiment. Cooper and Waldby propose this term to refer to the extensive but unacknowledged forms of embodied labor—surrogacy, provision and sale of body tissues, participation in clinical trials—that have emerged under the auspices of the Fourth Industrial Revolution. Clinical labor involves a visceral experience, a endurance of unpredictable risks of the most physical, embodied kind, and as such constitutes the prime example of the subsumption of life and biological processes to capital forces.

As Cooper and Waldby explain, clinical labor feeds on the borderlands of social citizenship, articulated along class, racial and gender faultlines (131). In this sense, the exploitative practices of clinical labor, such as the ones staged in *The Answers*, are sanctioned by the collusion of scientific development with the humanist legacy, namely with the body/mind divide that designs the sexualized, racialized, and naturalized members of society as "the disposable bodies of the global economy" (Braidotti *The Posthuman*

111). The Girlfriends, associated with embodiment and nature rather than with the rational subject, are construed as inferior and abject, which justifies their exploitation, commodification, and objectification in service of the Man's mastery of nature.

Gender plays an especially salient role in this equation. In their discussion of clinical labor, Cooper and Waldby note that women engage in the bio-genetic market "by recasting their feminine capacities for nurturance, maternity, and sexuality as negotiable assets" (64). This particular commodification of the female body is reflected in the GX: the Intimacy Team engaged in the experiment is but a euphemism for sex workers, and the obligations of the rest of Girlfriends trade on the passive, caregiver role traditionally ascribed to women in relationships. For instance, Mary's Emotional Girlfriend Handbook lists among her obligations to "listen to Kurt while affirming his opinion and offering limited amounts of advice or guidance," to "never disagree, challenge or complain to Kurt," and to "never criticize him for anything" (Lacey 67); while the Intellectual Girlfriend is dismissed for being "too intellectual," for looking at Kurt with "always a yawn in her eyes" rather than subservient admiration (Lacey 176). Not coincidentally, throughout the novel the Girlfriends establish continuous parallels between their roles in the GX and different forms of exploitative commodification of the female body, such as ovum donation or prostitution.

Class differences are another major factor enabling the GX's exploitative practices. In this, *The Answers* points toward the conflation between technological development and the neoliberal policies of advanced capitalism, which systematically preys on the weaker members of society and leaves scientific progress in the hands of the wealthy few that can sponsor it.

At the onset of the experiment, the GX is presented as "a scientific experiment for the good of society at large" (Lacey 66), in keeping with Kurt's conception of "the wealthy and powerful of the world" as "nodes of philanthropy and evolution, the one[s] who move us, as a species, forward with thought and generosity" (Lacey 42). However, as we gain access to Kurt's focalization in Part Two, 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. He felt sure there was a way to decode our disorganized reactions to partnership, the way two people can make each other so tremendously happy at one point only to reach new depths of misery or boredom only years, weeks, or months later. And, yes, this whole thing would be particularly healing to Kurt, but what he was really trying to do was help make a discovery that would help others, deeply alter the world. He felt he was standing on a precipice, that he was witnessing himself begin what would become his legacy. (Lacey 137)

Shielded by his fortune, fame, and the generous checks he pays to the Girlfriends, Kurt meets no hurdles for bringing his flight of fancy to life. Far from focusing on conducting a rigorous scientific endeavor, the experiments are often dictated by Kurt's whims and personal interests, such as the production of the film *The Walk* with the Girlfriend's recordings, and include humiliating assignments of questionable scientific value, such as standing up one of the Girlfriends in public for the pleasure of "watching a woman reject the company of another man for the pointed absence of his" (Lacey 200). The GX, then, pays mere lip service to scientific advancement and common good, amounting rather to a vanity project seeking Kurt's self-congratulation. This fiction is enabled by the limitless power and influence granted in advanced capitalism to moguls like Kurt, who are left to freely take advantage of society's underdogs.

If money is the factor allowing Kurt to dispose of a whole team of researchers, Girlfriends, and assistants, it is also the reason pushing the Girlfriends to enroll in the GX's "income-generating experience" (Lacey 28). This is the case of Mary, burdened by the debt accumulated trying to obtain a diagnosis in the American private healthcare system; 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 material circumstances that leave them no option but to accept being exploited by the GX. This lack of choice is clearly illustrated by Mary's confession in the opening pages of the novel:

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 seemed like my only real option. (Lacey 7–9)

By juxtaposing Kurt's unlimited power and the Girlfriends' restricted freedom, the novel comments on one of the issues at the core of contemporary debates on the Fourth Industrial Revolution: the risk of exacerbated social inequality. As Schwab notes, "the great beneficiaries of the Fourth Industrial Revolution are the providers of intellectual or physical capital" (16), causing a soaring gap between those dependent on their labor—clinical or otherwise—and the owners of capital. This widening rift may result in a "winner-takes-all market economy" where widespread access to technology is limited to an economic elite (Schwab 88). This concern is thoroughly aligned with the posthumanist highlighting of the "socioeconomic dynamics beyond the individual" enmeshed with access to technology, often disregarded by the technophilic stance of transhumanism (Hayles "Wrestling" 3).

Significantly, the novel's critique of the shattering effects of the GX's practices is enhanced by its stylistic features. In Part Two, the narrative shifts disjointedly between the points of view of different focalizers, whose accounts are often non-linear and fragmented, returning to significant episodes of their lives in analepses that disrupt the otherwise chronological arrangement of the plot. This motivates a reading in line with "the prevalence of repetition, indirection and the dispersal of narrative voice" that Anne Whitehead designates as hallmark of narratives of trauma, a label for which the Girlfriends' distressing experiences certainly qualify (161). On a different note, the polyphonic narration in Part Two produces a similar effect to that of digital narrative forms such as hypertexts, characterized by jumps, discontinuity, and a continuous displacement of the user's position (Aarseth 777). In this sense, the harnessing of these figures of non-linearity in Part Two can be said to mirror the fragmented, schizophrenic identity created by continuous exposure to datafication in our hyper-mediated

information age, most clearly pictured in Ashley's erratic sense of self and also evoked in the book's cover.¹

Thus, Part Two stages in its form the issues explored thematically, bringing to the fore the harrowing realities of those left behind by the neoliberal, neohumanist discourses that fuel current technoscientific development. This denunciation, informed by the principles of critical posthumanism, is succinctly summarized in Mary's lucid reflection: "Having a body doesn't give you any rights at all" (Lacey 17).

"WHO PUT ALL THIS FEAR IN US?": THE ANSWERS' VINDICATION OF EMBODIMENT.

Part Three of the novel, spanning the last 38 pages, recounts Mary's discharge from the GX after a violent accident between her, Kurt, and Ashley, the Anger Girlfriend. In formal terms, Part Three coincides with the return of Mary's autodiegetic, chronological narration. Read as a counterpoint to the polyphonic narration of Part Two, this restoration of Mary's narratorial control can be read as a translation of the recovery of her identity, her reclaiming of the mastery to define herself, breaking free from the dictates of the GX toward a new sense of the self based on the embracing of relationality, vulnerability, and embodiment.

In an interview with *The Paris Review*, Lacey reflects on the wish to do away with the body shared by transhumanism supporters and the Research Team's scientists:

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

¹ The original cover of the novel's hardcover edition pictures the piecemeal face of a woman, its fragments superimposed over each other, which can be thought to represent the Girlfriends' mangled, disjointed identities after being subjected to the distressing practices of the GX.

would be too upsetting to acknowledge the sort of temporary bloody mess that is your life. (Lacey in Traps)

As discussed earlier, this ambition to rise above embodiment is at the core of the Girlfriend Experiment, which sees the human penchant for relationships, and the inevitable pain and frustration that come with them, as an obsolete soft spot, an evolutionary delay to be removed from human nature. The possibility and desirability of overcoming this need is, however, repeatedly contested throughout Part Three.

In Part Two of the novel Mary had become increasingly involved in the “scheduled” relationship with Kurt, even exceeding the requirements of her role as Emotional Girlfriend. However, in their final meeting she realizes that, despite his claims that “we loved each other, from a scientific perspective, at least—and that’s all that counts,” her feelings had not been “an unfettered love but instead an obligation, a sense of being owned—how sad to think that these feelings might seem like love in the brain, that from the outside the difference couldn’t be seen” (Lacey 270). The GX’s failure to recognize true limerence undermines the very basis for the Girlfriend Experiment: if feelings cannot be reduced to informational patterns traceable and manipulable through technological means, they cannot be synthetically reproduced nor dissociated from the body, as promised by Identity Distance Therapy. Hence, the need for relationality cannot be dislodged from human nature, nor pain eradicated from human life.

This realization, as well as the discovery of the end use of the Girlfriends’ data, prompts Mary’s definitive divorce from the GX and its promises. She cloisters herself in her apartment, discards her company-issued smartphone—a stand-in for her involvement in the GX—and devotes herself to a slow life of reading and reflecting, longing for “all these people who had come to and gone from her, people who had meant something, done things to her, changed her, made her who she was now” (Lacey 225). Mary’s relationships with these people, as most of the instances of romantic, filial, or amical relations that populate the novel, are failed and frustrated, a source of pain and regret. Counterintuitively, this seems to back the GX’s view of human relationships as a hindrance, the idea that “love was as thrilling as it was temporary, a prelude to pain” (Lacey 40). Yet, the novel harnesses the acknowledgement of pain as part and parcel of human life to put forward a vindication of embodiment.

Mary's understanding of human experience as fundamentally affective and vulnerable, inextricably enmeshed with and traversed by others—"all these people who had come to and gone from her, done things to her, changed her" (Lacey 225)—offers the grounds for a rethinking of subjectivity and ethics, for the construction of horizontal, affective relationships with others. This reconceptualization is fully aligned with the critical posthumanist notion of the (post)human as "an assemblage, co-evolving with other forms of life, enmeshed with the environment and technology" (Nayar 13), standing in stark contrast to the transhumanist fantasies of imperviousness and transcendence. Mary's plea for the acceptance of vulnerable embodiment, as opposed to the widespread will to "ignore the temporary bloody mess that is life" (Lacey in *Traps*), is the call with which Lacey puts an end to the 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? Sitting on my escape, I saw that man who often sold water bottles on hot days in the street, but since the day was ending and cold and it was time to go home, he seemed to have given up and was just trying to give them away. But everyone kept rushing past him, would not accept water from a stranger. (Lacey 290-291)

At this point, we can circle back to Vint's comments on speculative fiction, which she believes can be put to work for advancing critical posthumanist goals as "an ethical project, a way of participating in the deconstruction of the default 'man' of humanism and undoing the historical damage fostered by habits of human exceptionalism" ("Speculative Fiction" 221). In its narrativization of contemporary technological and social trends—human enhancement, commodification of life, social inequality—and its call for a reconceptualization of subjectivity and ethics that embraces rather than discards embodiment, *The Answers* contributes to the ongoing exchange between fact and fiction, amounting to a critical literary take on the Fourth Industrial Revolution that invites us both to chart the current path of socio-technological developments and to imagine alternative futures.

CONCLUSION.

This paper has analyzed the representation of human enhancement in Catherine Lacey's *The Answers*. The novel exposes the limits of transhumanist ambitions to transcend embodiment, denouncing its links with neo-liberal capitalism and its continuation of the biased Enlightened understandings of the human and the human body. Breaking away from these transhumanist discourses, the novel articulates a call for embodiment, affect and vulnerability as the basis for a renewed conception of subjectivity and relations, thus siding with the precepts of critical posthumanism. In this narrative instantiation of current technoscientific developments, *The Answers* intervenes in contemporary debates about human enhancement to both chart current trends and imagine alternative paths, in tune with Klaus Schwab's demand for collective awareness and responsibility in the time of the posthuman:

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 techno-capitalism, *The Answers* can be ascribed to what Booker brands "the turn to dystopia" in speculative fiction, responding to "perceived inadequacies in existing social and political systems" (20). In this, it can be grouped together with other contemporary works on human enhancement in American literature, such as Richard Powers's *Generosity: An Enhancement* (2009), Dave Egger's *The Circle* (2013) or 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 the posthuman is constructed along transhumanist, neoliberal lines.

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