

Rethinking Aging: A Simple Posthumanist View of Lifespan

Aanchal Ahuja

Research Scholar, Department of English and Cultural Studies, Panjab University,
Chandigarh

Article Received: 26/01/2026

Article Accepted: 27/02/2026

Published Online: 28/02/2026

DOI:10.47311/IJOES.2026.8.01.517

Abstract

This study explores David A. Sinclair's *Lifespan: Why We Age - and Why We Don't Have To* through a critical posthumanist lens, focusing on his claim that aging stems from epigenetic "information loss." Such framing challenges long-standing views of age as inevitable decline, yet oddly preserves human uniqueness by positioning us above biological limits. Rather than accept mortality as fixed, Sinclair presents it as reversible error - a glitch rather than destiny - through mechanisms like sirtuin stimulation, NAD⁺ replenishment, and reprogramming cells partway to pluripotency. These methods recast the organism not as static form but data-pattern open to redesign, blurring boundaries once thought firm between old and young, organic and engineered, limited versus expanded existence. Engaging Rosi Braidotti's ideas - especially her notions of zoeic vitality, transversal ethics, and convergence - the analysis reveals how the book shapes a new selfhood beyond traditional humanity, one embracing fluidity, interconnection, with technology woven into what counts as alive. What happens when a story pushes back against time? Sinclair's work resists the urgency of death through shifting narrative rhythms and imagined futures. Yet this freedom feels limited, tied too closely to belief in progress driven by technology. Instead of questioning deeper structures, it leans on invention, economic spread, and cleverness - hoping these will fix unfair systems, ownership of life, and damaged environments. Such faith may quietly return control to humans, overriding collective boundaries and Earth's thresholds. When viewed alongside posthuman ideas challenging human-centered upgrades and our tangled role in planetary crisis, a conflict emerges clearly: longer lives shine bright, but justice lags behind. Unequal reach, fragile ecosystems - they demand ethical attention grounded in connection, not just speed or scale. Longevity becomes more than science; it turns into a space where old beliefs about human superiority meet new ways of being beyond the self.

Keywords: Posthumanism, Transhumanism, Anthropocene, Posthuman Subjectivity, Biopolitics, Aging

Theoretical Framework

A solid theoretical base supports this research by offering a clear way to interpret Lifespan - not just as mainstream science writing, yet also as part of wider conversations on

age, physical existence, and what lies ahead for humanity. Absent such guidance, Sinclair's arguments might appear only as medical assertions or imaginative forecasts. Rather than accept those narrow views, the analysis places the book alongside ongoing discussions around human identity, life beyond traditional limits, and advances driven by technology - opening space to question how extended lifespans influence beliefs about selfhood, natural order, and moral duty.

What shapes this study begins with critical posthumanism - a perspective advanced clearly by Rosi Braidotti. Instead of holding on to old ideas about humans as separate, fully rational beings, it questions those views sharply. Human importance placed above all else - this idea gets scrutinized here. At its core lies zoe: a form of raw, active life not limited to people but moving through animals, machines, ecosystems. Connections matter more than boundaries; mixtures disrupt fixed categories. Modern tools that alter bodies reveal how shaky distinctions like natural versus artificial really are. Boundaries between living and non-living blur under such pressure. Because *Lifespan* treats the body as data-shaped and modifiable, aging seen as changeable fits naturally within this lens. Rather than inevitable decline, age becomes something adjustable, embedded in wider flows of material and code. Looking more closely, the work uses ideas from scholars like Francesca Ferrando to separate critical posthumanism from transhumanism. Rather than seeing humans as central, one challenges long-held beliefs about nature; the other pushes technological growth to boost human abilities. Improvement through machines stands at its core, driven by faith in advancement, dominance, and personal peak performance. Although Sinclair never labels himself part of that movement, his focus on living much longer, upgrading bodies, and overcoming biology echoes those views clearly. Such separation matters here since it reveals inner conflicts in *Lifespan* - places where letting go of "natural" boundaries still hides a belief in human superiority and control.

A different line of thought shaping the framework comes from posthuman ethics within debates about the Anthropocene, especially ideas developed by thinkers like Cary Wolfe and Donna Haraway. Because it emphasizes how deeply humans are tied to ecosystems, this view brings attention to shared fragility across species along with doubts about placing too much faith in technology. Rather than seeing environmental boundaries and unjust conditions as puzzles fixed by invention alone, it questions such assumptions sharply. From this angle, Sinclair's handling of unequal access to life-extending tools gains new clarity, since his book notes harm to nature yet leans on promises of advancement to settle concerns.

Introduction

Could aging simply be a repairable error instead of an unavoidable fate? That idea - once limited to fringe theories and sci-fi stories - is now discussed openly, thanks to rising

attention around research aimed at slowing or reversing bodily deterioration. Thanks largely to breakthroughs in genetics, cellular mechanisms, and lab engineering, the concept of growing old has shifted: it's increasingly seen not as passive decay, but as a process open to manipulation. Among the works bringing this view to wider audiences, few have had more impact than the writings of David A. Aging, Sinclair suggests in his work on lifespan, could be seen not as inevitable but as something manageable - opening doors wider than just lab results. Because biology now meets technology so deeply, ideas about identity begin shifting. Humans once accepted time's toll without question; today that assumption wobbles. When science treats old age like a reversible state, beliefs long taken for granted start to unravel. Meaning changes slowly when progress moves quickly.

Though often seen through science, aging also holds deep cultural meaning. Because it shapes how people experience time, it influences both personal choices and shared beliefs. While philosophers once welcomed aging as part of life's depth, today it is more likely viewed as something to slow down. Even so, bodies still change no matter what tools are used. Since ancient times, thinkers have linked growing older to wisdom and limits. Yet current trends treat these changes like errors needing fixes. Although medicine extends years lived, it does not always improve how those years feel. Where reflection once guided views on aging, now data and devices play larger roles. Still, the body refuses to follow only human plans. What was once accepted is now questioned, measured, adjusted. Despite efforts to reshape it, aging remains tied to who we are. Not every shift brings progress - some just bring difference. Now more than ever, unease grows alongside advances in longevity science, self-experimentation trends, and medical technologies aiming to stretch healthy years. Because of this shift, later life turns into a focal point - where long-held beliefs about humanity meet new visions beyond it.

Scientists study long life using different ideas - some look at evolution, others at wear and tear, metabolism, or genes. Lately, though, attention has turned toward how genes are managed, not just what genes exist. David Sinclair plays a major role here. He argues aging comes from fading control over gene activity, not permanent harm to cells - an idea known as the Information Theory of Aging. This view opens doors: if errors stem from lost data, fixing them might slow or even reverse aging. The book *Lifespan* frames bodies as systems that can be updated, blurring old boundaries such as natural versus artificial, young versus old, survival versus decay.

Though widely discussed, conversations around Lifespan mostly stay confined to medical research, lab-based studies, or mainstream media takes - often weighing whether Sinclair's ideas work, hold up under testing, or promise too much. Some critiques target weak evidence behind specific biological pathways; others shift toward moral concerns like who gets treatment, how rules are set, or what systems must change. Rarely does attention turn to Lifespan as a symbolic artifact shaping age-old arguments about bodies, selfhood,

and mortality. Especially absent is close reading via critical posthumanism - a framework tuned to spotting where tech-driven stories disrupt traditional views of humanity, yet still repeat them quietly.

This divide matters more now because people's tech abilities are tied tightly to fragile ecosystems, uneven societies, unstable climates. Though Lifespan touches on unfairness, excess use of resources, pressure on nature, its answers lean heavily on invention, forward movement, flexibility of humans. These kinds of fixes make one wonder: does studying long life actually shift focus away from humans - or just boost old ideas of human superiority using new tools? Right now feels urgent - longevity work spreads fast into business systems, policy decisions, daily routines - with little grounding in ethics that challenge blind faith in technology.

This paper takes on Lifespan by probing its portrayal of aging through a posthuman lens, yet noticing persistent ties to traditional humanist views. Instead of simply accepting progress claims, it asks how the book defines bodily change when humans are no longer seen as central. Rather than treating innovation as neutral, attention turns toward whether Sinclair's ideas challenge long-standing hierarchies between species and matter. Even so, some arguments loop back into old patterns - elevating control, deepening divides, overlooking environmental costs. Through these angles, tensions emerge within supposed breakthroughs.

Placed against the backdrop of critical posthumanist thought, Lifespan emerges through an engagement with debates on transhumanism and moral questions tied to the Anthropocene. Through this lens, the study builds connections across science studies, philosophy, and cultural critique without leaning on familiar disciplinary boundaries. A fresh perspective unfolds - one that clarifies how modern conversations about living longer shift assumptions about what it means to age, to live, or even to be human. Rather than accept technological fixes at face value, attention turns toward the edges of such reasoning, exposing where ethics falter when aging is reduced to an engineering challenge. As one consequence, research into long life becomes more than lab work - it transforms into a space for asking who benefits, under what terms, and at what cost.

Aging Seen as Lost Information Instead of Inevitable Deterioration

A core theme unfolding across Lifespan involves recasting aging - not as fate written in biology - but as damage stemming from eroded cellular memory. Across chapters, Sinclair dismisses notions of old age as inherent to life itself. Rather than accept decline as natural, he frames it as accumulating glitches in gene regulation - errors, importantly, that might be undone. Such a pivot reshapes how readers view time's effect on bodies; suddenly, deterioration feels less like progression, more like malfunction. By treating decay as repairable breakdown instead of inevitability, the entire argument gains traction. Old

assumptions about growing older give way to something malleable, adjustable, even optional.

Aging, according to Sinclair's theory, hinges on separating the genome from the epigenome. Though DNA stays mostly unchanged - seen as steady digital data - the layer controlling it shifts differently. Instead of breaking down completely, what derails is the cell's ability to read instructions properly. This control system, treated like analog signals, picks up interference across years. When clarity fades in these regulatory marks, confusion follows: cells forget their roles. To illustrate, he turns to images of damaged discs or glitchy programs - not broken hardware, just misread files. Even aged tissue holds intact genes beneath disordered expression. Cloning studies back this idea; mature cells can yield fully youthful beings. Such outcomes imply aging lives less in genes than in how they're accessed. What slips isn't the code, but the reading mechanism.

This idea gains strength when Sinclair describes how cells lose their "identity." Because epigenetic signals weaken over time, cells slowly stop performing their designated tasks, which leads to poor function, chronic inflammation, and diseases tied to getting older. Rather than framing aging as physical breakdown, he sees it as errors in signaling. Since those changes might be undone - by restoring the cell's original programming - aging appears changeable, not fixed. Such a view breaks sharply from widespread beliefs that see deterioration as inevitable and purposeful.

One key insight stands out: shifting how we describe aging changes its meaning entirely. Because aging gets labeled as data decay, Lifespan blurs sharp divides once thought absolute - like young versus old, fit versus sick, natural versus altered. Instead of enduring decline passively, people now see it as a glitch needing repair. Such thinking fits within broader views seeing bodies not as static forms but evolving systems open to redesign. Yet the figures reveal a quiet inconsistency: although aging is treated as something changeable, words like fix and restore suggest a preferred younger condition the body ought to regain. A youthful form still acts as the hidden standard, despite doubts about natural physical boundaries.

A key aspect of this theme involves Sinclair's repeated assertion that aging lacks any basis in "biological law." Such statements recur throughout, lending credibility to deep-level technological involvement. Life's gradual decline gets cast less as an inevitability and more as a random outcome shaped by history. By positioning aging this way, efforts to alter it gain stronger footing - yet the view comes at a cost. Reducing old age to mere breakdown sidelines perspectives where growing older isn't about fixing but living. Meaning shifts sharply when time becomes merely something to overcome.

Looking at the results here, it becomes clear that Lifespan treats aging more like a system error than an inevitable life stage, leaning on data-driven analogies alongside biological facts. Because of this shift in framing, the answer to the first research question takes shape - how the book redefines both bodily decline and personhood beyond traditional human boundaries. Still present, though, are underlying conflicts set up early, which resurface repeatedly: undoing nature while enforcing new standards, treating age as changeable yet glorifying youth, challenging physical limits even as they get quietly reinforced.

The Body As A System That Can Be Altered With Technology

A shift in perspective treats aging not as decline, but as erasure - a missing set of data. From there, the book advances a view: the body responds to updates, much like software altered by code. If wear is just miscommunication, then fixes become possible. With that assumption, flesh turns malleable under tools shaped by science. Interventions stack - not only genes, yet tissues and whole networks respond too. Change isn't sudden; it accumulates across layers once thought rigid. What was seen as fate now looks adjustable, even reversible. Biology bends when nudged with precision, according to Sinclair's narrative.

What stands out clearly is how Sinclair frames molecular "survival circuits," especially sirtuins relying on NAD⁺. Though found in many organisms, these systems respond mainly under low-resource conditions. When intake drops or physical effort increases, such pathways get switched on by subtle environmental cues. Instead of celebrating habits alone, he focuses on what they unlock inside cells. Activation shifts priorities - away from expansion toward maintenance and recovery. Hardware-like, the body waits for precise signals to operate at full capacity. When maintenance slips, decline follows - not by chance, but through neglect of needed triggers.

One way to see control taking shape lies in how supplements, drugs, and new treatments are talked about. Rather than seeing aging as fixed, Sinclair presents molecules that increase NAD⁺ or act like fasting as means to override built-in biological limits. Far from being seen as unnatural, such methods appear as logical outcomes of research, building quietly on existing understanding. Words like "switching on," "enhancing," or "restarting" slip into descriptions, borrowing ideas from software and machines. This framing paints the body less as flesh and more as code waiting to be rewritten. What feels key here is not rebellion against nature, but a kind of return - an effort to recover lost function eroded by modern living.

What stands out most emerges in Sinclair's description of partial cellular reprogramming through Yamanaka factors. Rather than mere optimization, the organism becomes subject to active rewriting. In these studies, mature cells are coaxed into earlier stages of development, regaining youthful traits while keeping their specialized roles. Though not turned entirely into stem cells, they regain functional capacity once lost.

Reversing age here is framed not as fantasy, but as measurable intervention. Instead of slowing decline, science now aims at structural renewal. Because aging is treated as malleable, control shifts toward deliberate redesign. Biological identity, once fixed, now appears adjustable under lab conditions. Such work moves beyond preservation into fundamental change. With each trial, the boundary between natural process and engineered outcome blurs further.

Looking closely, the idea shows how Lifespan imagines physical existence beyond human limits, blurring lines between living bodies and machines. Instead of seeing the body as a fixed biological unit, it appears as a mix of organic functions intertwined with engineered systems. Still, such a perspective may deepen limited views on wellness and worth - where improving biology turns into a duty. Although the narrative challenges old ideas about bodily constraints, it backs a way of living centered on constant monitoring through tech. These contradictions grow clearer when later sections examine disparities and moral questions.

Challenging Views on Time Aging and Life Stages

A shift away from traditional views marks another core idea in Lifespan. Rather than accept age-related decline as unavoidable, Sinclair presents aging as something malleable, open to influence. Time, framed here not as a straight path but as flexible terrain, reshapes how we see growing older. Such ideas do not stand apart from science - they weave through it, amplifying its reach beyond labs into broader questions about meaning and identity. Life stages lose rigidity when biology becomes less fate, more frontier.

From start to finish, Sinclair pits raw energy against society's rigid timeline - when to learn, labor, slow down, then disappear. Though aging unfolds in the body, it also gets shaped by unspoken rules that narrow what feels possible. Take his grandmother Vera: her voice lingers through moments where she resists labels, seeks thrills, reads poetry aloud. Calling herself anything tied to age? She would not do it. Her actions quietly break rank with norms most accept without question. Such memories anchor the piece - not as extras, but as proof that living long means guarding wonder, humor, instinctive reach toward new things.

This story approach shows something steady: growing older appears as a limit placed from outside, not as a time shaped by inner significance. Not portrayed as a unique part of existence carrying fresh insight, later years come across as unfairly stripped of youthful traits. Sinclair's idea of longer life does little to reshape how we understand aging; rather, it aims to remove the boundary between young and old. A preferred tomorrow emerges where birth dates matter less since body clocks could keep restarting.

When Sinclair turns to future possibilities, a break from straight-line time grows clearer. Instead of aging on a fixed path, people might stay youthful much longer, altering how they approach learning, work, and relationships. With ageless bodies, retirement fades into irrelevance, while plans unfold without rigid stages. Such ideas unsettle long-held

beliefs - those rooted in the idea that limits give life weight and purpose. Suddenly, time does not drain away like sand; it stretches, bends, even offers more than expected.

Yet here lies a contradiction, quietly shaping how longer lives are framed. Though progress is no longer seen as a straight path downward, worth still ties tightly to output and energy. Living more years gains meaning mostly if those years extend labor, invention, or usefulness. Other views - where rest, reliance, or fragility hold weight - rarely enter the conversation. Facing change, people still carry familiar pressures - just reshaped. Staying busy, functional, alert - is now a long-term demand. Expectations shift rather than fade.

Looking closer, the theme shows Lifespan undermines traditional views of time yet holds on to old ideas about worth and function. Instead of gaining meaning through insight or peace, growing older matters now due to delays or reversals. That shift sharpens the response to the study's core query - how far the book really breaks from humanist beliefs. Though it questions death and downward trajectories, it swaps them for endless energy ahead, not richer visions of varied later lives.

Inequality and the Uneven Reach of Longer Lives

A fourth key idea in Lifespan deals with unequal access to treatments that extend life. Rather than treating aging research as an unqualified success, Sinclair touches on class differences. In the book's second half, he notes that longer lives and healthier years are not shared equally across populations - emerging therapies might widen such gaps. Yet how the issue of fairness is presented - and settled - shows underlying contradictions within his argument.

What stands out is Sinclair's consistent emphasis on money, schooling, and location as key forces behind lifespan and healthspan. Though aging gets described in terms of fading biological data, social lines clearly influence who feels it most. Life expectancy gaps between higher- and lower-income groups are pointed to more than once. It seems likely, he concedes, that only those with resources will gain early access to cutting-edge anti-aging tools. That acknowledgment breaks the scientific surface with a dose of self-awareness. Where you live shapes what treatments you can reach. The availability of tests, pills, genetic fixes, or cellular resets follows existing hierarchies. Power - economic and structural - steers whose cells might stay younger longer.

Even with awareness, unequal access tends to be seen not as built into systems, but as something short-lived. Longevity tech, according to Sinclair, will likely move like past innovations - rare and costly at first, later common and within reach. Examples such as antibiotics, vaccines, and computers back up this view. Progress in science, along with spreading markets and government actions, is expected to smooth out initial gaps over time. Unequal outcomes show up here more as delays in availability than as deep flaws in how these medical tools emerge. A closer look at the numbers uncovers a quiet tension beneath the surface. Though aging appears early on as rooted in bodily systems, inequality later

emerges as something outside - social, adjustable, handled apart. How capitalism steers longevity research gets barely any attention, nor do patent rules or worldwide hierarchies directing who benefits. Questions about who gains entry shift instead toward imagined institutions down the road, left unexamined today.

What stands out is how responsibility gets narrowed down to the person, especially when talking about unequal outcomes. Attention turns to choices like food, physical activity, or taking pills - options said to be within reach now, before future medical advances arrive. By focusing here, broader societal fixes may fade into the background, replaced by a mindset where long life depends on smart individual decisions. The message becomes clear: living longer rests less on shared progress and more on disciplined self-care.

Looking closer, the theme reveals Lifespan recognizes inequality yet softens its impact. Although differences in social conditions appear clearly, these gaps fail to disrupt the hopeful tone around living longer. Instead of framing disparity as a core moral issue, it appears as something fixable along the way. Such an observation hits at the heart of the inquiry into Sinclair's posthuman ideal - its boundaries come into view when immortality talk still leans on current power structures, despite aiming beyond natural constraints.

Living Longer While Caring for Earth in the Age of Humans

One key idea in Lifespan involves how longer human life spans might clash with Earth's natural boundaries. Though Sinclair acknowledges worries - such as greater strain on resources, more pollution, or crowded populations - the book treats them as solvable hurdles rather than hard limits. Such problems appear directly within the narrative, showing awareness that environmental health matters for long-term survival. Still, the solutions offered lean heavily on future technologies, suggesting people will manage nature through innovation. This outlook keeps human ingenuity at the center, even when discussing fragile ecosystems. What emerges is less a balance with nature, more a belief that science will override it.

Though people are living longer and wealthier lives, Sinclair points out such changes may intensify demands on natural systems. Not only does current consumption drive environmental stress more than rising numbers do, it raises deeper concerns about sustainability. Extended lifespans might worsen output of waste, increase carbon footprints, drain finite supplies - these risks aren't ignored. Instead, they surface as quiet reflections on responsibility, hinting at science's broader ties to Earth's limits. Longevity research, here, edges into conversation with ecology. Suddenly, growing older becomes part of a larger web, shaped by what the planet can bear.

Still, such worries often meet counterpoints based on human creativity and progress. According to Sinclair, the rise in world population has begun to level off, while people living longer lives generally choose smaller families. Past patterns of city growth and shifts in

technology serve as his reference point - proof that invention frequently outpaces scarcity. Problems tied to nature's boundaries appear less like fixed barriers and more like challenges calling for smarter tools, not reduced ambition. Solutions emerge gradually, shaped by trial, context, not inevitability.

What stands out here is how little regard goes toward life beyond humans. Rather than being seen as delicate webs worth preserving, natural systems mostly serve as scenery for human success. Instead of asking how longer lives affect Earth's many species, the focus stays fixed on human output, imagination, and comfort. Even when connections between beings are briefly noted, longer lifespans still matter more than thriving ecosystems. This way of seeing uncovers a hidden tension. Though Lifespan uses terms linked to posthuman thought - blurring bodily boundaries, merging with machines - it still holds on to ethics shaped entirely around human needs. Living much longer is assumed right away to be positive; environmental issues are brushed aside with trust in inventions yet to come instead of rethinking values. That people living far longer could worsen ecological strain remains unexamined.

What stands out is how Lifespan frames mastery as the answer to posthuman ambiguity, sidelining shared responsibility. Instead of rethinking survival within broader systems, nature gets treated like a system awaiting fine-tuning. The insight ties the argument together - Sinclair may push against aging, yet holds fast to outdated ideals of advancement and dominance. Such assumptions waver sharply when facing ecological breakdown.

Conclusion

This work began by questioning a key issue in current discussions on long life spans: the idea that aging can be medically delayed might transform views of human nature, even as it repeats some ideas it seems to oppose. Through a close look at David A. Sinclair's book Lifespan, interpreted via critical posthumanism, the focus shifted away from asking if anti-aging research succeeds toward exploring which identities, ideals, and possible worlds such science enables. Rather than judging its accuracy, the examination saw Lifespan as part performance of science, part narrative embedded within larger conversations around mortality, physical existence, and control through technology.

What emerges clearly is how Lifespace enacts a deep change in perspective. Instead of viewing aging as mere deterioration, Sinclair's model casts it as a fading of epigenetic data - this turns physiology into something fluid, adjustable even. Because of this, distinctions like young/old or organic/synthetic start to blur, breaking familiar human-centered divides. Positioned within such shifts, the work echoes posthuman thought: existence seen not as isolated but interwoven with tech and transformation. Time itself gets remade - not a one-way path ending in decay, but elastic, possibly stretchable. Such moves challenge long-held beliefs about what counts as natural progression. Far from confirming old limits, the book amplifies arguments that emerging biology reshapes who we think we are

Even so, findings point to recurring efforts to control change. Through topics like physical modification, time, disparity, and environment, breaking free from natural boundaries keeps getting managed - often via belief in technology or persistent trust in human priorities. The energy of youth still acts as an unspoken standard; living longer becomes less about acceptance and more about constant personal oversight. Unequal outcomes appear dismissed as short-term gaps in reach, not deep-rooted flaws. Nature's constraints meet confidence in invention instead of shifts in moral stance. Such contradictions shape posthuman thought - not overturning it, but revealing layers where older ideals linger beneath new terms. Aging detaches from biology while humans oddly stay in charge.

Works Cited

Braidotti, Rosi. *The Posthuman*. Polity Press, 2013.

Braidotti, Rosi. "Posthuman Critical Theory." *Journal of Posthuman Studies*, vol. 1, no. 1, 2017, pp. 9–25.

Brenner, Charles. "A Science-Based Review of the World's Best-Selling Book on Aging." *Archives of Gerontology and Geriatrics*, vol. 99, 2022, Article 104630.

Ferrando, Francesca. "Posthumanism, Transhumanism, Antihumanism, Metahumanism, and New Materialisms: Differences and Relations." *Existenz*, vol. 8, no. 2, 2013, pp. 26–32.

Haraway, Donna J. *Staying with the Trouble: Making Kin in the Chthulucene*. Duke University Press, 2016.

Levin, Susan B. *Posthuman Bliss? The Failed Promise of Transhumanism*. Oxford University Press, 2021.

Sinclair, David A., with Matthew D. LaPlante. *Lifespan: Why We Age—and Why We Don't Have To*. Atria Books, 2019.

Wolfe, Cary. *What Is Posthumanism?* University of Minnesota Press, 2010.