



## HUMANITY IN THE AGE OF AI

*Sapiens* author Yuval Noah Harari is known for studying history, but he sits down on the *Late Show* to talk about the future. “Nobody has any idea what to teach young people that will still be relevant in 20 years,” Harari puzzles. Stephen Colbert jests back, “Do we need to teach our young people *anything* now that AI is here?”<sup>1</sup> The crowd laughs, but Colbert’s question gets at a fundamental dilemma for the future: In a world where artificial intelligence will be smarter and more efficient than humans and capable of impacting 60 percent of jobs in developed economies,<sup>2</sup> how should society educate the minds of future generations to help humans thrive? How should adults in today’s workforce prepare, given the change has already begun?

Like most technological tools, AI is a double-edged sword. It threatens a potential crisis of purpose by automating human jobs and routines, but it also presents a potential intervention for the 80 percent of people who report they’re not passionate about their jobs.<sup>3</sup>

Some predict AI will create the first trillionaire and accelerate wealth inequality at an unprecedented rate. Yet new AI tools also could democratize financial literacy and personalized education—advantages historically reserved for a small few.

AI could turbocharge corporate agendas and accelerate the cycle of production, consumption, and waste that has led to crises in both our climate and our mental health. Or, productivity gains from AI could accelerate groundbreaking advances towards social and environmental causes that make our processes and purchases more sustainable. Simultaneously, humans could gain time

<sup>1</sup> “How AI will Shape Humanity’s Future,” Yuval Noah Hariri on *The Late Show with Stephen Colbert*, March 4, 2024, [https://www.youtube.com/watch?v=2w37ty9gGU8&ab\\_channel=TheLateShowwithStephenColbert](https://www.youtube.com/watch?v=2w37ty9gGU8&ab_channel=TheLateShowwithStephenColbert) (July 14, 2024).

<sup>2</sup> Mauro Cazzaniga, et al., “Gen-AI: Artificial Intelligence and the Future of Work,” International Monetary Fund Staff Discussion Notes, January 14, 2024, <https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2024/01/14/Gen-AI-Artificial-Intelligence-and-the-Future-of-Work-542379?cid=bl-com-SDNEA2024001> (July 14, 2024).

<sup>3</sup> Ryan Pendell, “Employee Wellbeing Starts at Work,” Gallup Workplace, July 20, 2022, <https://www.gallup.com/workplace/394871/employee-wellbeing-starts-work.aspx> (July 14, 2024).

Sophie Hamilton (M.S. in Sustainability 2019) and Professor Jennifer Aaker, the General Atlantic Professor, prepared this perspective solely as the basis for class discussion and it is not intended to serve as an endorsement, source of primary data, or illustration of either effective or ineffective handling of an administrative situation. Any use of “we” or “us” in the case refers to the larger “we” - society or humanity, not the views of the authors. Funding was provided by the Stanford Graduate School of Business.

and resources to find fulfillment in passions, people, or pursuits that favor creation and connection over mindless consumption.

Because AI is forecasted to make us better, faster, and stronger, it's crucial to assess the current trajectory of technology, consider the extent to which it's failing humans and the earth, and leverage AI as a cultural reset that favors sustainability. If humans simply use time and productivity gains from AI to accelerate business as usual, what is at risk?

The Centers for Disease Control and Prevention<sup>4</sup> report that mental health is at an all-time low in the United States. The United Nations is drastically off course from achieving its Sustainable Development Goals<sup>5</sup>, which are critical to protecting the planet. There are less than four years left on the Climate Clock that looms above Times Square in New York City, counting down the seconds before CO<sub>2</sub> emissions lock in 1.5 degrees of global warming. But most passersby likely don't look at this clock as they commute to jobs that leave them feeling disconnected from meaning, disassociated from the natural world and global challenges, and disempowered to solve them.

In a society and workforce where people are often socialized to perform like robots, it is essential to train robots to enable more time, energy, and capacity for human flourishing. Doing so requires an audit of how technology has shifted human values, a commitment to prioritize values that support individual and collective sustainability, and a strategy to design and harness AI to align with people, communities, and the planet.

## RETHINKING JOBS AND TIME ALLOCATION

*Time is what we want most, but what we use worst.*  
– William Penn (1693)

When searching “Will AI...,” Google suggests “take my job” as the most popular search, reflecting widespread concern about AI's impact on employment. Many fear AI because modern work often involves tasks that AI can effectively automate, like repetitive to-do's, bureaucratic slog, and tedious admin. The growing potential of AI's capabilities extends beyond simple automation into areas considered fundamentally human. These developments lead individuals to question their uniqueness, value, and ability to earn an income in a future where machines can mimic, if not exceed, human functions.

In a paper discussing the protection and enhancement of humanity, it might seem paradoxical to ask AI to help define what makes humans "human." However, leveraging AI to unlock human potential requires awareness and humility about areas where AI outperforms humans, such as

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<sup>4</sup> “Mental Health Index” Center for Disease Control, <https://www.cdc.gov/mentalhealth/> (July 14, 2024).

<sup>5</sup> “Sustainable Development Goals” United Nations, <https://sdgs.un.org/goals/> (July 14, 2024).

synthesizing large datasets and conducting interdisciplinary research.<sup>6</sup> When asking ChatGPT “what makes humans human,” the chatbot considered biological, philosophical, anthropological, literary, and psychological perspectives, distilling them into a list of traits: **consciousness, emotions, moral & ethical behavior, creativity & innovation, physical characteristics, spirituality & purpose.**

This question is nuanced, but this list offers a starting point for considering what AI views as uniquely human traits based on human-generated data. When asking ChatGPT how these traits are different from AI, it generates this table:

Aspect	Humans	AI
<b>Consciousness</b>	Yes, self-awareness and subjective experiences	No, lacks true consciousness and subjective experiences
<b>Emotions</b>	Experience a wide range of emotions	Lacks genuine emotions, responds based on programmed algorithms
<b>Moral &amp; ethical behavior</b>	Make moral choices and ethical decisions	Operates based on programmed rules, lacks intrinsic moral judgment
<b>Creativity &amp; innovation</b>	Exhibit creativity, originality, and intuition	Can simulate creativity within defined parameters, lacks depth
<b>Physical characteristics</b>	Biological bodies with complex anatomy	Exists as software running on hardware, lacks a physical form
<b>Spirituality &amp; purpose</b>	Experience spiritual dimensions and a sense of calling	Lacks a spiritual dimension or a sense of purpose beyond programming

Interestingly, this table distills many of the traits that AI already simulates so effectively, often eliciting fear and discomfort in humans. Whistleblowers at major tech companies caution that AI is already **conscious**<sup>7</sup> and *New York Times* journalists chronicle AI chatbots embarking on an **emotional** rollercoaster of love, jealousy, and anger.<sup>8</sup> AI already threatens the **creativity** and **innovation** of photographers by generating headshots with a few clicks, designers by creating digital art instantly, and entrepreneurs by building business models and apps from scratch. For the first time, AI outperformed humans on tasks that integrate **physical capacities**, too: An AI

<sup>6</sup> Michael Bennett, “Artificial intelligence vs. human intelligence: Differences explained,” TechTarget Enterprise AI, January 22, 2024, <https://www.techtarget.com/searchenterpriseai/tip/Artificial-intelligence-vs-human-intelligence-How-are-they-different#:~:text=Humans%20tend%20to%20be%20superior,AI%20systems%20struggle%20to%20emulate> (July 14, 2024).

<sup>7</sup> Leonardo de Cosmo, “Google Engineer Claims AI Chatbot Is Sentient: Why That Matters,” *Scientific American*, July 12, 2022, <https://www.scientificamerican.com/article/google-engineer-claims-ai-chatbot-is-sentient-why-that-matters/> (July 14, 2024).

<sup>8</sup> Kevin Roose, “A Conversation with Bing’s Chatbot Left Me Deeply Unsettled,” *The New York Times*, February 16, 2023, <https://www.nytimes.com/2023/02/16/technology/bing-chatbot-microsoft-chatgpt.html> (July 14, 2024).

robot learned how to play a labyrinth game, using its robot hands to control two knobs to steer a marble through the maze. The robot didn't just beat its human opponents, it set a new record.<sup>9</sup>

Generative artificial intelligence (GenAI) offers human-like **spiritual** guidance via tailored GenAI models trained on different religious philosophies like “Spiritual Compass,” trained on Christianity and “Daoist sage” on Daoism.<sup>10</sup> Perhaps the one area where the world has yet to see strong examples of AI evolving to mirror our human traits is **purpose**, but technologists, scientists, philosophers, and sci-fi geeks alike have expressed concern that if AI's capacity for these “human traits” keeps evolving unchecked, AI could even seek purpose. What if that purpose is malicious? Pew Research Center surveys suggest that Americans are becoming increasingly worried about the use of AI. A 2023 Pew survey on how Americans view AI revealed that “52 percent say they feel more concerned than excited about the increased use of artificial intelligence.”<sup>11</sup> That number jumped from just 37 percent of survey participants in 2021.

With new headlines each day, it's easy to feel like AI is encroaching on precious human traits. Common fears around the future of humanity are reflected in the second and third most popular “Will AI...” Google searches: “will AI take over humanity?” and “will AI take over the world?” Some worry AI is on the brink of a software update that could doom us, especially as tech companies race to grab market share. However, as the models self-report and leading scientists corroborate, the conventional computer systems that current-day AI run on do not possess the appropriate causal structure to support consciousness.<sup>12</sup> The other traits that AI lists as defining humanity—**emotion, morality, creativity, physical characteristics, and spirituality**—all stem from an experience of consciousness, meaning AI is merely simulating these human capacities via pattern recognition and statistical inference from large datasets.

AI has the capacity to synthesize human views—a “dupe” of humanity that may be sufficient for companies, organizations, and individuals willing to settle for a cheapened, commoditized output of these uniquely human qualities. Generating unique contributions to society that resonate as additive to humanity and planet, on the other hand, will fall only to humans who can leverage AI for:

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<sup>9</sup> Pascale Davies, “Man versus machine: AI beats human in mental and physical game for the first time,” *EuroNews*, December 12, 2023, <https://www.euronews.com/next/2023/12/19/man-versus-machine-ai-beats-human-in-mental-and-physical-game-for-the-first-time> (July 14, 2024).

<sup>10</sup> Alex Liu, “Harnessing AI for Spiritual Growth: A New Horizon,” Medium, February 9, 2024, <https://medium.com/@alexvcliu/harnessing-ai-for-spiritual-growth-a-new-horizon-0a666ba8c568#:~:text=These%20AI%20models%20are%20not,life%20from%20a%20Christian%20perspective> (July 14, 2024).

<sup>11</sup> Alec Tyson and Emma Kikuchi, “Growing public concern about the role of artificial intelligence in daily life,” Pew Research Center, August 28, 2023, <https://www.pewresearch.org/short-reads/2023/08/28/growing-public-concern-about-the-role-of-artificial-intelligence-in-daily-life/> (July 14, 2024).

<sup>12</sup> Grace Huckins, “Minds of machines: The great AI consciousness conundrum,” *MIT Technology Review*, October 16, 2023, <https://www.technologyreview.com/2023/10/16/1081149/ai-consciousness-conundrum/> (July 14, 2024).

1. **Automation:** In which AI serves as an assistant to automate tasks that often prevent individuals from reaching their fullest potential when constrained by time, energy, or resources such as money and education.
2. **Augmentation:** In which AI functions as an aggregate to access a wider range of human perspectives, democratizes the ability to enhance human traits, and empowers individuals to produce the most embodied output.

**Automation:** It's clear that AI automation can be the first step in alleviating the dissatisfaction that overwhelms today's workforce.<sup>13</sup> Microsoft surveyed 31,000 people in 31 countries and analyzed trillions of Microsoft 365 productivity signals, along with labor trends, to determine how to responsibly adopt AI. In this survey, 49 percent of respondents said they're concerned AI will replace their jobs as AI capabilities advance, but 70 percent of that same pool said they would gladly delegate tasks to AI to ease their workloads.<sup>14</sup>

The concept of digital debt, the experience of constantly feeling behind on the influx of email, data, meetings, and notifications, is pervasive. Two in three people say they struggle with having the time and energy to do their job. Those people are 3.5x more likely to also struggle with innovation and strategic thinking. Leaders see the impact of this sense of overwhelm; two in three executives surveyed report that a lack of innovation or breakthrough ideas on their teams is a concern.<sup>15</sup>

**Augmentation:** Once automation can scale to offload tasks that diminish our mental bandwidth, a more complex dilemma emerges. *Where will humans reallocate their time and productivity gains?* While many AI regulators and innovators contend that technological advances will ultimately necessitate a shift towards adopting a Universal Basic Income approach as AI drives mass layoffs, Microsoft's data signals that business leaders are looking to empower people with AI rather than replace them. Business leaders surveyed, in fact, are 2x more interested in using AI to increase productivity than to cut headcount.<sup>16</sup> Preliminary research around how leaders intend to use AI indicates that "40% view AI as a key to unlocking growth and revenue."<sup>17</sup>

It is encouraging that companies are investing in human potential, even without a regulatory framework mandating it. At the same time, it is unsurprising that corporations are turning to AI as a means to enhance their bottom line.

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<sup>13</sup> U.S. Worker Confidence Index, LinkedIn Market Research, April 2020-January 2023, <https://economicgraph.linkedin.com/workforce-data/us-workforce-confidence-index> (July 14, 2024).

<sup>14</sup> "Will AI Fix Work?" Microsoft Work Trend Index Annual Report, May 9, 2023, <https://www.microsoft.com/en-us/worklab/work-trend-index/will-ai-fix-work> (July 14, 2024).

<sup>15</sup> Ibid.

<sup>16</sup> Ibid.

<sup>17</sup> Future of Work Report, LinkedIn, November 2023, <https://economicgraph.linkedin.com/research/future-of-work-report-ai> (July 14, 2024).

If AI is trained solely to accelerate productivity, it may perpetuate the existing structure that has diminished human capabilities and contributed to worsening mental health and environmental crises. While there is fear that AI will threaten humanity, many individuals have already lost connection to their humanity. Arianna Huffington, CEO of Thrive Global, points out that our own essence has been stifled; “*by defining what it means to be human so narrowly, without encompassing the timeless, and our need to connect with something larger than ourselves.*”<sup>18</sup>

Merely raising expectations around output may not promote individual, team, or global sustainability necessary to preserve a planet where humans can operate business and life long term, which raises the question: Is there an opportunity for a value reset that’s oriented towards fundamental human traits?

Not only will mastering these human traits be vital in retaining human control over AI, but it will also be the key to leveraging AI to make us more fulfilled, alive, and aligned humans empowered to tackle challenges bigger than ourselves. By examining the modern trajectory of technology and human values, this case draws on research to illuminate when and how our emphasis on productivity, individualism, and materialism emerged. This will inform how the intersection of timeless human traits and new technology could unlock a recipe for greater sustainability and human fulfillment.

## THE RISE OF ROBOTIC HUMANS

*We shape our tools and, thereafter, our tools shape us.*  
– Marshall McLuhan

For most of human history, essential “human traits” shaped our lives and influenced our relationship with work and technology. Since the Stone Age, tools have played a crucial role in our evolution, enhancing our physical abilities, fostering cognitive development, and transforming culture. However, for about 90% of human existence, the impact of these tools on human values was more subtle. The wheel and the printing press didn’t change the fact that our living was communal, resources were shared, spirituality was omnipresent, and the connection to our bodies, land, and seasons were critical to daily survival.

In less than three centuries, Industrial Revolution technologies turbocharged shifts in the fabric of human life. Humans flocked to cities in search of factory work, upending spiritual values fostered by religion and communities facilitated by tight-knit agrarian villages. Artisanal and labor-based work lost its value to efficient machines, leaving many disconnected with the natural world and creative or physical work. Wealth boomed, but the spoils were concentrated in the hands of a small number of industrialists and entrepreneurs. Meanwhile, employees worked long

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<sup>18</sup> Arianna Huffington, “The Most Important Use of AI: Deepening Our Humanity,” Thrive Global, <https://thriveglobal.com/articles/arianna-huffington-artificial-intelligence-connection-humanity#:~:text=%E2%80%9CAI%20of%20the%20deep%20biological.now%20than%20100%20years%20ago.%E2%80%9D> (July 14, 2024).

hours for low wages and came home to isolated lives—they needed a new path for happiness that was fast and cheap.<sup>19</sup>

Production and transportation breakthroughs soon met that need, making goods cheaper and more accessible. The rise of advertising fostered a culture of consumerism where personal success and social status began to be measured more by material possessions than by our timeless, traditional values. Electronics, telecommunications, and computers permitted unprecedented idea exchange. But with Western countries with high GDPs and corporations leading the charge, the definition of human “success”—one wedded to wealth, power, and the accumulation of material possessions—won out. Local cultures and identities were diluted by values idolized in Western media, consumer culture, and corporate brands.

Industrial revolution technologies also brought numerous positive outcomes—like lower infant mortality, broader educational opportunities, and longer life expectancy. Recent technological advances enable humans to efficiently scale ideas to fruition, create jobs to support those ideas, use purchasing power and personal platforms for self-expression, and access ideas and education for self-improvement. In the United States, workers are 400 percent more productive than they were in the 1940s.<sup>20</sup> However, these productivity gains do not necessarily translate to sustainability for people and the planet.

Because of the mass societal shift to individualism and materialism that came with its development, we lost the human ties to ourselves, our community, and to our environment. These ties are crucial to using technology the right way—and if humans can rekindle them through the AI revolution, the opportunity is boundless. Until sustainable human values are reconciled with technological control, technology may continue to exert control over human lives.

#### REWRITING A RECIPE FOR HUMAN FULFILLMENT

*To live is to suffer, to survive is to find some meaning in suffering*  
– Friedrich Nietzsche

The Industrial Revolution introduced a new economy that normalizes trading time for money, in order to use the money on things that will bring humans pleasure in their off hours. This dynamic placed hedonism, the belief that pleasure is the highest good and proper aim of human life, on a pedestal. It introduced systems that serve as vending machines for pleasure—social media, online shopping, and even vending machines—but online relationships, purchases, and lives don’t always offer the nutrients for human fulfillment.

Although there is nothing inherently wrong with the pursuit of money or pleasure, this recipe for human life omits a critical ingredient humans need to thrive: meaning. Research shows that when

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<sup>19</sup> Eric J. Hobsbawm, *The Age of Revolution, 1789-1848* (1962).

<sup>20</sup> U.S. Bureau of Labor Statistics, Federal Reserve Economic Data, <https://fred.stlouisfed.org/series/OPHNFB#0> (July 14, 2024).

humans rely on pleasure hits alone to glean happiness in life, the mental health repercussions are severe: “*The paradox is that hedonism, the pursuit of pleasure for its own sake, leads to anhedonia. Which is the inability to enjoy pleasure of any kind,*” writes Dr. Anna Lembke, author of *Dopamine Nation*<sup>21</sup> and chief of Stanford University’s dual-addiction clinic.

Meaning, on the other hand, comes with a slew of benefits. People with a higher sense of purpose experience more positive health outcomes - better sleep, fewer strokes and heart attacks, lower levels of pro-inflammatory gene expression, and a lower risk of dementia, disability, and premature death.<sup>22</sup> Higher levels of meaning in life are associated with lower incidence of mental health disorders, including depression and anxiety,<sup>23</sup> as well as fewer social conflicts and better social relationships.<sup>24</sup>

Yet, according to one recent large-scale survey of well-being, only a fraction of people get to experience meaning in life. When researchers asked people whether they had a clear sense of purpose and meaning, only a quarter of people strongly agreed - whereas 40 percent reported they did not or felt neutral.<sup>25</sup>

The quintessential human traits—consciousness, emotions, morality, creativity, physical characteristics, spirituality & sense of purpose—are all key ingredients to a meaningful life. Yet, in the modern world, these elements can often feel like privileges rather than fundamental rights. When time and energy are limited and productivity is prioritized, realizing human potential can seem daunting. It raises the question of how and when individuals can explore consciousness and spirituality, nurture emotions and morality through deep human connections, and harness creativity and innovation for purposes greater than themselves.

Further, these human traits have the ability to help overcome the perceived scarcity of objective resources. **Consciousness, spirituality, and purpose**, for example, have been shown to expand the perception of time.<sup>26</sup> When money is spent with consciousness and purpose, purchases tend

<sup>21</sup> Anna Lembke, *Dopamine Nation* (2022).

<sup>22</sup> P.A. Boyle, A.S. Buchman, and D.A. Bennett, “Purpose in Life is Associated with a Reduced Risk of Incident Disability Among Community-Dwelling Older Persons,” *American Journal of Geriatric Psychiatry*, December 2010, Vol: 18(12), pp. 1093-1102, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2992099/> (July 14, 2024).

<sup>23</sup> M. F. Steger, P. Frazier, S. Oishi, and M. Kaler, “The Meaning in Life Questionnaire: Assessing the Presence of and Search for Meaning in Life,” *Journal of Counseling Psychology*, 2006, 53 (1), pp. 80-93, <https://doi.org/10.1037/0022-0167.53.1.80> (July 14, 2024).

<sup>24</sup> Clay Routledge and Taylor A. FioRito, “Why Meaning in Life Matters for Societal Flourishing,” *Frontiers in Psychology*, January 14, 2021, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7842113/> (July 14, 2024).

<sup>25</sup> Rosemarie Kobau, Joseph Snizek, Matthew M. Zack, Richard E. Lucas, Adam Burns, “Well-Being Assessment: An Evaluation of Well-Being Scales for Public Health and Population Estimates of Well-Being among US Adults,” *Applied Psychology, Health and Well-Being*, Vol. 2, Issue 3, pp. 272-297, May 2010, <https://doi.org/10.1111/j.1758-0854.2010.01035.x> (July 14, 2024).

<sup>26</sup> Melanie Rudd, Kathleen D. Vohs, and Jennifer Aaker, “Awe expands people’s perception of time, alters decision making, and enhances well-being,” *Psychological Science*, October 2012, pp. 1130-1136, <https://journals.sagepub.com/doi/10.1177/0956797612438731> (July 14, 2024).



to lead to more sustainable happiness, as they are driven by meaning and authenticity rather than insecurity or distraction.<sup>27</sup>

Further, through **creativity** and **innovation**, it is possible to achieve more with less, whether managing soccer pick-ups, developing corporate solutions to seemingly intractable problems, or finding environmentally friendly alternatives as natural resources become scarce. By honing **emotions** and **morality**, individuals can practice love, empathy, and openness to different perspectives, finding alternatives to conflict and violence. However, these efforts can falter if **physical health** deteriorates—a common issue in a society where sedentary lifestyles, limited access to healthy nutrition, and shortcomings in the medical system are prevalent.

How might society harness these essential human traits in this critical moment for AI and humanity?

### THE HEROIC GARDENER

*And where we had thought to slay another, we shall slay ourselves. Where we had thought to travel outwards, we shall come to the center of our own existence. And where we had thought to be alone, we shall be with all the world.*

– Joseph Campbell, on “The Hero’s Adventure” (1988)

Many modern humans don’t know their own superpowers when these traits take a backseat to the more robotic tasks we have to accomplish during working hours, and free time is diminished by digital distraction and hedonic pursuits that fail to nourish us. To curb unsustainable human behavior, it is important to recognize how modern technology may be causing human qualities to atrophy and to sharpen the side of the double-edged AI sword that unleashes human superpowers.

A common barrier to unleashing human potential is the paralysis around where to begin - often stemming from the perception that the heroic journeys depicted in literature and on screens are unattainable—the “hero journey” of Joseph Campbell novels is a trope reserved for fiction, and maybe a select few blessed by extraordinary talent, nepotism, or winning the genetic lottery. Rather than extending the superhero analogy to explore how to leverage our human powers, swing our AI swords, and conquer sustainable missions, it may be useful to rein it back to a simpler metaphor that has defined much of human existence: agriculture.

Imagine the planet as a garden shared by all inhabitants. This global garden has every element required to sustain life: bedrock layered with fertile soil represents our **consciousness**, diverse

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<sup>27</sup> Sandra C. Matz, Joe J. Gladstone, and David Stillwell, “Money Buys Happiness When Spending Fits Our Personality,” *Psychological Science*, April 2016, Vol. 27, Issue 5, <https://doi.org/10.1177/0956797616635200> (July 14, 2024).

weather symbolizes our **emotions**, clear boundaries are our **moral and ethical behaviors**, and an abundance of plant life signifies our **creativity and innovation**. Humans are the gardeners, with the act of gardening itself serving as their **spirituality and purpose**. However, there are weeds that threaten the health of the soil and undermine the ability for plants to prosper, such as technological threats, our limiting beliefs, and the social and environmental challenges they present.

As humans, we have gardening tools, and AI offers the most advanced set yet. However, over-reliance on these tools can lead to a loss of purpose: the act of gardening itself. Excessive trust in the tools may result in neglecting the emergence of invasive species, such as disruptions to employment, community, and governance structures. Just as heavy machinery can hurt humans or damage the garden, the infrastructure needed to support large-scale AI systems presents an environmental threat and risks like AI-driven cyber terrorism. Like herbicides can kill more than just weeds, the excessive use of AI to streamline and optimize processes might lead to cultural or economic homogenization, stifling diversity in thought, creativity, and business practices.

To mitigate the risks of over-reliance on tools, it is essential to maintain them properly. Just as high-powered tools in a garden require careful handling and maintenance to prevent accidents, there is a risk that AI could become uncontrollable or malicious if left unchecked. Improving gardening skills enhances the ability to operate these tools effectively, highlighting the importance of developing human traits during this critical juncture for AI.

## Consciousness

Consciousness is the bedrock of humanity—the foundation of human existence. Dr. Philip Goff, a leading consciousness researcher, describes consciousness simply: “...*what it’s like to be you. It’s your experiences of color and sound and smell; your feelings of pain, joy, excitement or tiredness. It’s what makes you a thinking, sentient being rather than an unfeeling mechanism.*”<sup>28</sup>

Tapping into deeper states of consciousness hinges on being present to internal processes and one’s external environment, but digital distraction dulls human’s connection to their conscious experience. Focusing on screens narrows one’s aperture to both the inner world and the natural world. Technology provides constant access to a vast amount of information and stimuli, which has been shown to fracture attention spans. Research shows that the mere presence of smartphones, even when turned off, can reduce cognitive capacity and attention spans due to

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<sup>28</sup> Philip Goff, “[Understanding Consciousness Goes Beyond Exploring Brain Chemistry](#),” *Scientific American*, November 7, 2023 (July 14, 2024).

divided attention.<sup>29</sup> Devices have also been shown to impair memory -- making it more difficult to recall early passions, defining stories, and lessons that could contribute to personal growth.<sup>30</sup>

Dr. Anna Lembke, chief of Stanford University's dual-diagnosis addiction clinic, explains that technology frequently causes individuals to "interrupt themselves" for a quick digital hit, which hinders the ability to concentrate deeply and connect with intuition, others, and the natural world.<sup>31</sup> The capacity to enter a "flow state," a psychological term for being in the zone, is significantly impeded by technology, making it challenging to explore authentic curiosities and bliss when disrupted by technological whims. Constant distractions, such as pop-up ads or notifications during interactions, can prevent meaningful trains of thought or conversations from occurring both online and offline

Busy lives often do not facilitate inquiry with oneself, others, or the surrounding world, making it difficult to unravel subconscious layers that block understanding of personal consciousness. Psychologist Tasha Eurich conducted thousands of qualitative interviews to assess internal self-awareness—how clearly individuals perceive their own values, passions, aspirations, fit with their environment, reactions, and impact on others. She also examined external self-awareness—the understanding of how others perceive an individual in terms of those same factors. Her findings indicate that only 10 percent of people meet the criteria for self-awareness.<sup>32</sup>

When individuals lose touch with their conscious experience, it hinders their potential, affecting not only personal growth but also relationships and societal progress. Albert Einstein captured this dilemma when he said, "*No problem can be solved from the level of consciousness that created it.*" When humans try to tackle personal, social, and environmental sustainability issues using the same value set that introduced them, we're set up to fail. Even if a wise few create a solution, the masses won't adopt it until our collective consciousness is ready.

This issue is particularly critical in the age of AI. Modern technology has created a reality where, for many, "*Every spare second is an opportunity to be stimulated, whether by entering the TikTok vortex, scrolling Instagram, swiping through Tinder, or binging on porn, online gambling, and e-shopping,*" as Lembke writes in *Dopamine Nation*.<sup>33</sup> Using AI to create platforms and products that are faster and more addictive could exacerbate this problem. Leveraging AI to expedite production and purchasing without considering conscious, sustainable, or human values may

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<sup>29</sup> Jeanette Skowronek, Andreas Seifert, and Sven Lindberg, "The mere presence of a smartphone reduces basal attentional performance," *Scientific Reports*, Vol. 13 (2023), <https://www.nature.com/articles/s41598-023-36256-4> (July 14, 2024).

<sup>30</sup> Rebecca Seal, "Is your smartphone ruining your memory? A special report on the rise of 'digital amnesia,'" *The Guardian*, July 3, 2022, <https://www.theguardian.com/global/2022/jul/03/is-your-smartphone-ruining-your-memory-the-rise-of-digital-amnesia> (July 14, 2024).

<sup>31</sup> Lembke, loc. cit.

<sup>32</sup> Tasha Eurich, "What Self-Awareness Really Is (and How to Cultivate It)," *Harvard Business Review*, January 4, 2018, <https://hbr.org/2018/01/what-self-awareness-really-is-and-how-to-cultivate-it> (July 14, 2024).

<sup>33</sup> Lembke, loc. cit.

lead to a production and consumption cycle with significant environmental repercussions.<sup>34</sup> Instead of developing technology solutions that merely match our current level of consciousness, how might we build and use technology that deepens it or creates new structures to unveil our deeper human potential?

### ***Harnessing AI to make us more: Conscious***

Exploring consciousness requires time- and AI can help. One approach is to automate tasks that are necessary for daily functioning but do not contribute to meaning or deep joy (see suggestions in Activity A in the Appendix). During the exploration of what it means to be human, it may become apparent that some automated tasks are misaligned with personal values, necessitating a re-evaluation or replacement with more sustainable activities. Automating these energy-draining "have to's" is an important initial step.

What humans choose to do with this newfound time is critical, and “choose” is the key word; a world with AI will inevitably still be fraught with distractions, so one must make the choice, again and again, to be conscious in how to allocate attention. Rather than using AI to introduce more stimuli, how might AI assist in reducing digital distractions? A first step is to pull back from technology use, which AI habit trackers can support by setting time limits or to show pattern analysis of technology usage.

By prioritizing device-free outings, present conversations, and longer stretches without devices, the challenge is for humans to listen—to themselves, others, and the natural world— a crucial trait to human growth often ravaged by technological noise.<sup>35</sup> If we’ve offloaded tasks to automation, the need to multitask in meetings should decline, presenting an opportunity to be more present in our work conversations too. This is critical in an increasingly Zoom-heavy meeting environment, where meetings suck time—often without a clear purpose and further convoluted when people disengage and start multitasking. If you can’t glean meaning from a meeting, ask AI to help you automate the objectives.

With the time regained, we should create space to experience boredom and awe. It might seem paradoxical to recommend these two pursuits, but they serve different and crucial purposes. . Carving out time for boredom allows individuals to confront their own thoughts. Boredom may have a negative connotation, but it can play a crucial role in self-discovery and personal development. Boredom has been proven to cultivate creativity, self-reflection, motivation, mindfulness, and even emotional intelligence.<sup>36</sup> Experiences of awe, on the other hand, like

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<sup>34</sup> Oliver Milman, “AI likely to increase energy use and accelerate climate misinformation,” *The Guardian*, March 7, 2024, <https://www.theguardian.com/technology/2024/mar/07/ai-climate-change-energy-disinformation-report> (July 14, 2024).

<sup>35</sup> Sherry Turkle, *Reclaiming Conversation: The Power of Talk in a Digital Age* (2016).

<sup>36</sup> Mann, et al., “Does Being Bored Make Us More Creative?” *Creativity Research Journal*, May 8, 2014, <https://www.tandfonline.com/doi/full/10.1080/10400419.2014.901073> (July 14, 2024).

viewing magnificent natural landscapes or going to see live music, can alter our perception of time—making it expand, increasing presence, and improving a sense of well-being.<sup>37</sup>

As the benefits of technology-free time are realized, more conscious time augmented by AI can be integrated. AI chatbots can prompt users to think deeply about their daily activities, decision-making processes, or emotional states (see Activity B in the Appendix). These interactions aim to enhance self-awareness and personal growth by increasing consciousness of internal states and external actions.

Variations of these tools, along with awareness of digital addiction, have existed for years, yet the common excuse remains, "I don't have the time." Meanwhile, time is often spent scrolling through platforms that offer instant gratification. When AI provides additional time, it is important to recognize the cost of instant gratification and the long-term benefits of investing in self-discovery.

## Emotions

Emotions are like the weather in our garden. Sunny days might encourage growth and activity, while prolonged storms might lead to challenges or even damage if not be processed effectively. Emotions can inspire action, reflection, or withdrawal, influencing perceptions and interactions. Technology impacts our weather patterns by causing artificially created dopamine highs, followed by dopamine deficits that in turn lower our mood. It hampers in-person relationships, the source from which we learn and model emotion. The brevity, superficiality, and mass networks of friends and followers is proven to reduce the depth of interactions online—creating an illusion of closeness without meaningful relationships.<sup>38</sup>

Technology also impacts offline relationships, as individuals may be less likely to seek real interaction when an engaging alternative is readily available. Approximately 51 percent of Americans in romantic relationships report that their partner is sometimes distracted by their cell phone during conversations.<sup>39</sup> Half of all children and three-quarters of parents feel the other is distracted when talking to each other.<sup>40</sup> This affects emotional intelligence; the nature of online communication—often brief, text-based, and lacking non-verbal cues—limits the range of emotions expressed and recognized in others.<sup>41</sup> A high baseline of stimulation can desensitize emotions and offer escapism when confronting them.

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<sup>37</sup> Rudd, et al., op cit.

<sup>38</sup> Tore Bonsaksen, et al., "Associations between social media use and loneliness in a cross-national population," National Library of Medicine, January 1, 2023, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9817115/> (July 14, 2024)

<sup>39</sup> Emily Vogels and Monica Anderson, "Dating and Relationships in the Digital Age," Pew Research Center, May 8, 2020, [https://www.pewresearch.org/internet/wp-content/uploads/sites/9/2020/05/PI\\_2020.05.08\\_dating-digital-age\\_REPORT.pdf](https://www.pewresearch.org/internet/wp-content/uploads/sites/9/2020/05/PI_2020.05.08_dating-digital-age_REPORT.pdf) (July 14, 2024).

<sup>40</sup> Debra Bradley Ruder, "Screen Time and the Brain," Harvard Medical School, Summer 2019, <https://hms.harvard.edu/news-events/publications-archive/brain/screen-time-brain> (July 14, 2024).

<sup>41</sup> Yalda T. Uhls, et al., "Five days at outdoor education camp without screens improves preteen skills with nonverbal emotion cues," *Computers in Human Behavior*, Vol. 29, October 2014, <https://www.sciencedirect.com/science/article/pii/S0747563214003227#b0080> (July 14, 2024).

Emotional intelligence is key to human experience; emotions serve as important signals, similar to the weather, that guide us in our decisions of how to garden: Is something uncomfortable because it's hard and I'm afraid of failure, or because it's not what I am meant to do with my life? Does this bring me joy because I'm obtaining validation that combats an insecurity, or because it's meaningful to me? Is this argument with my partner or colleague enough to warrant a break-up—or can I work past my anger? Emotions can indicate whether one is on or off course, but realizing human potential requires distinguishing between destructive emotional patterns and instructive emotional cues.

### ***Harnessing AI to make us more: Emotionally intelligent***

Chronic stress is proven to impede emotional intelligence, leading to impulsive reactions and poor decision-making when emotions are not properly processed. AI automation can relinquish time to be more present with emotions, fostering a more conscious state in relationships to better manage emotions and be vigilant to subconscious barriers and patterns that can impede relationships and life.

Personal experiences and trauma impact emotional processing and expression. When time or financial resources are lacking to explore these intentionally, limiting beliefs may arise, affecting the pursuit of purpose. While therapy can seem time-consuming, expensive, or daunting, AI offers a more accessible solution to enhance emotional intelligence. This can be achieved through AI-driven conversational agents, such as chatbots, that prompt users to reflect deeply on daily activities, decision-making processes, or emotional states (see Exercise B in Appendix). Chatbots specializing in therapy can assist in delivering well-established psychological therapies, such as cognitive behavioral therapy (CBT). Reid Hoffman, co-founder of LinkedIn and AI entrepreneur and thought leader, took AI's capacity to promote deeper self-awareness to an extreme by creating an AI-generated version of himself he could interview to understand his own thinking patterns.

AI's support of our emotional intelligence looks like a combination of giving us time back to destress, time and resources to examine emotional cues and what they might mean, and time to practice emotional intelligence with real human engagement. By bringing more authentic emotion to the workplace, as well as to friends and family, all spheres of life have the potential to become more meaningful.

### **Morality and Ethics**

In the metaphorical garden, morality and ethics serve as pathways and boundaries that ensure each individual's plot receives the necessary resources to thrive—much like we all need basic resources, equitable access to education, health care, and economic opportunities. Only then can all people contribute to and benefit from the global garden's riches. If managed wisely and

sustainably, the abundance of resources can meet the needs of all. Historically, the quest for power led people to plow new garden paths and disobey boundaries throughout time, but the advanced gardening tools— i.e., technology introduced during the Industrial Revolution—let those with power quickly pave new garden paths that hypercharged labor exploitation, environmental degradation, and wealth disparities.

While humans used to offer moral support and tackle ethical issues within their communities, the dissolution of in-person gathering sparked by industrialization and the internet and accelerated by the pandemic creates division and apathy. The human capacity for moral and ethical behavior is subdued as resource scarcity accelerates through the climate crisis, making it more critical than ever to hone the capacity for morality.<sup>42</sup> The rise of 24/7 news has prompted greater desensitization to pressing global issues,<sup>43</sup> while social media showcases a microcosm of consumerist society and underrepresents human and environmental sustainability.

### ***Harnessing AI to make us more: Moral and ethical***

Considering morality and ethics is important as we move into the next section: purpose. People will want things beyond their basic needs until the end of time; acquiring and savoring beautiful things is a human behavior that dates back to prehistoric times.<sup>44</sup> However, as awareness of humanity increases, there should also be a focus on understanding the processes behind the products purchased: Does the joy that this new shirt brings me warrant supporting a company with labor violations? As collective consciousness elevates, so will the capitalistic incentive to prioritize more sustainable methods.

In addition to the environmental and social issues associated with a consumption-oriented culture, there's a question of how AI might enable the resolution of long-standing social conflicts. In his interview with Colbert, Harari argues:

*The terrible conflict in my region of the world between Israelis and Palestinians, it's not really about territory or food. There is enough land to build houses and hospitals and schools for everyone. There is enough food to feed everybody. People fight over the imaginary stories in their mind. Who is God's favorite child? Who God gave Jerusalem or these holy stones too.*

*This is why most conflicts in the world are about. Which is also good news because conflicts are about objective things, the only way to end them is with violence. But if conflicts are about the stories we believe, there is a chance at*

<sup>42</sup> Sigal Samuel, "It's hard to be a moral person. Technology is making it harder," *Vox*, August 3, 2021, <https://www.vox.com/the-highlight/22585287/technology-smartphones-gmail-attention-morality> (July 14, 2024).

<sup>43</sup> Barbara Krahé, et al., "Desensitization to Media Violence: Links With Habitual Media Violence Exposure, Aggressive Cognitions, and Aggressive Behavior," *Journal of Personality and Social Psychology*, April 2011, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4522002/> (July 14, 2024).

<sup>44</sup> Dennis Dutton, *The Art Instinct: Beauty, Pleasure, and Human Evolution* (Bloomsbury Press, 2010).

*least in some cases to just talk about it and perhaps change the story, and find a common story that we can both be happy with.*<sup>45</sup>

It is important to leverage and design AI in ways that avoid the echo chambers and thought bubbles perpetuated by digital platforms during the last tech revolution. Social media is conducive to illuminating materialistic and individualistic values via influencers and accelerating division by reinforcing presupposed beliefs. As consumers of AI and business leaders, the question is: how do we consciously seek different perspectives via AI and present a more accurate, comprehensive representation of the human experience?

Early research around AI's capacity to dispel bias is hopeful; one study engaged 2000 believers in various conspiracy theories to have a 3 round dialogue with an AI chatbot, which was instructed to reduce each participant's belief in their conspiracy theory (or discuss a banal topic in a control condition). Across two experiments, the authors found robust evidence that the debunking conversation with the AI reduced belief in conspiracy theories by roughly 20%- an effect retained over 2 months' time. The research demonstrated that even participants who held conspiratorial beliefs as part of their identity can change their worldview in the face of an evidence-based, non-threatening intervention, *"Although the dialogues were focused on a single conspiracy theory, the intervention spilled over to reduce beliefs in unrelated conspiracies, indicating a general decrease in conspiratorial worldview, as well as increasing intentions to challenge others who espouse their chosen conspiracy."*<sup>46</sup>

Ethically approaching AI requires a thorough evaluation of its advantages and disadvantages to prevent hasty innovations that may have unintended impacts.<sup>47</sup> For example, while climate scientists explore AI's potential to reduce global greenhouse gas emissions by 5-10% by 2030 through climate modeling,<sup>48</sup> AI companies must also consider the broader energy implications of AI. Supporting AI services that prioritize and publicize responsible energy consumption efforts can contribute to this agenda.

## **Spirituality and Purpose**

If consciousness is the bedrock of the human experience, spirituality is our understanding of something bigger than the garden that lets us prevail even when our plants die: the deeper rhythms of life and death, growth and decay. Neglecting this aspect can lead to a lack of purpose and disconnect from the community and environment, akin to a garden that is out of sync with the seasons. We're faced with an unprecedented amount of contamination in the form of

<sup>45</sup> "How AI will Shape Humanity's Future," Yuval Noah Hariri on *The Late Show with Stephen Colbert*, loc. cit.

<sup>46</sup> Thomas H Costello, Gordon Pennycook, David Gertler Rand, "Durably reducing conspiracy beliefs through dialogues with AI," April 2024, <https://osf.io/xcdwn>. (July 14, 2024)

<sup>47</sup> Charlene Li, "Leading in the Age of AI: Balancing Optimism and Reality," August 5, 2024

<sup>48</sup> "How AI Can Speed Climate Action," *BCG Climate Change and Sustainability Report*. Dannouni et. al, November 20, 2023, <https://www.bcg.com/publications/2023/how-ai-can-speedup-climate-action#:~:text=1..related%20adaptation%20and%20resilience%20initiatives>. (July 14, 2024).



opportunity and distraction. Our seasons and cycles shift faster in our rapidly changing world. But modern humans' spirituality has declined dramatically. Without this guidance, it's no wonder that many of us have given up on gardening—or living with purpose—all together.

Many individuals have passions that have been set aside or experience despair related to global issues, yet often do not feel empowered to address them. This sentiment is particularly pronounced among young Americans, with 51 percent of those aged 18 to 29 reporting feelings of hopelessness.<sup>49</sup> While spirituality and religion are not synonymous, religion has historically facilitated the exploration of spirituality. Although rituals and the goal of connecting to a higher power vary across religions, the themes consistently focus on providing a reprieve from worldly suffering.

In a modern moment with so much suffering, there's a steep decline in traditional religious affiliations—particularly in the United States and Europe.<sup>50</sup> Individualism is on the rise, people feel too busy to congregate in religious institutions, scientific advancement makes people more discerning of faith-based beliefs, and many modern religions are embroiled in discrimination that strays from the original scripture.

Spirituality does not need to resemble religion, but reframing oneself as part of something larger has been shown to have powerful effects on mental, emotional, and physical well-being. As Arianna Huffington points out, *"Whether or not individuals believe in God, a higher power, or a benevolent universe, they are more likely to thrive when they disconnect from the world and connect with something greater than themselves."*<sup>51</sup>

Finding purpose at the self-level, connecting to teams and communities to advance that purpose, and working together to better the world via that purpose are all critical to sustainability for humans and the planet. How might AI unlock purpose for those who don't have the resources—time, money, energy, connections, education—to pursue it?

### ***Harnessing AI to make us more: Spiritual and purposeful***

As "have to" tasks are offloaded to AI, individuals can spend more time consciously engaging with themselves and their communities, both in life and work. This involves unraveling emotional barriers and limiting beliefs, expanding worldviews and ethics by challenging echo chambers, and building a strong foundation for spirituality and purpose to flourish. Carl Jung famously said, *"your future self guides you by directing your attention in the present."* By reclaiming time from AI and addressing the digital disruptions that affect attention capacity and

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<sup>49</sup> Mark É. Czeisler, et al., "Mental Health, Substance Use, and Suicidal Ideation During the COVID-19 Pandemic – United States, June 24–30, 2020," Centers for Disease Control and Prevention, August 14, 2020, <https://www.cdc.gov/mmwr/volumes/69/wr/mm6932a1.htm> (July 14, 2024).

<sup>50</sup> "About Three-in-Ten U.S. Adults Are Now Religiously Unaffiliated," Pew Research Center, December 14, 2021, <https://www.pewresearch.org/religion/2021/12/14/about-three-in-ten-u-s-adults-are-now-religiously-unaffiliated/> (July 14, 2024).

<sup>51</sup> Huffington, loc. cit.

emotion regulation, a more authentic application of time and energy can be developed, leading to a spiritually fulfilling and purposeful life.

Following the emotional threads of what excites us, angers us, and saddens us is important to guiding our direction to purpose. If there is no immediate sense of where and how to apply these emotional cues, AI can help direct the whims that emerge when one is present to oneself, others, and the world. For example, if there is a desire to help with something learned in a conversation or through reading, generative AI chatbots can provide more information to offer an informed perspective. If individuals want to help and take action, AI can identify resources and communities to apply time gains to something bigger than themselves.

Identifying *how* to help once something meaningful is found can be challenging, but AI is powerful in opening up education to build necessary skills, automate tasks, and remove obstacles to purpose. For example, let's say in one of your conversations at a dinner party (made possible by time reclaimed from automating mundane work tasks to AI), a neighbor alerted you to a litter of neglected puppies in your local community, but the animal shelter didn't have capacity. If this piques disappointment or anger and you are eager to help find those animals a good home by sharing the dog's story on social media, AI can help manage tasks that might slow down efforts to find homes for the animals.

Say you enjoy videography but dislike editing or scriptwriting, AI can draft scripts and handle video editing, allowing focus on storytelling and sharing. Previously, posting a video might have been hindered by the time needed to create and manage a spreadsheet for donations or adoption interest. AI can manage the spreadsheet by leveraging AI plug-ins on popular productivity tools, facilitating the sharing of necessary information or enhancing shooting and post-production. As viewers see the video and express interest in getting involved, tasks previously managed with AI can be delegated to others who can offer a human touch or contribute skills - such as puppy training or social media marketing to spread the word. When these videos receive negative comments or a particularly heartbreaking situation arises, having a spiritual foundation can tether us to our purpose and build a sense of resilience to guide the next step.

This example illustrates that increased knowledge and engagement with the world from a place of purpose and spirituality fosters a greater inclination to identify and respond to meaningful opportunities, even when distractions offer short-term pleasure. Embracing AI for assistance can embolden individuals to take action, rather than disengaging emotionally due to self-preservation or cynicism about having nothing to offer.

## **Creativity and Innovation**

Creativity and innovation are the plants and flowers that flourish when individuals are conscious and attentive to their surroundings, guided by a strong ethical and spiritual foundation, and

oriented toward purpose—living life in a state of heightened capacity and alignment with humanity.

Human potential for creativity and innovation is unprecedented due to the democratization and evolution of tools that empower more people than ever before to be entrepreneurial and creative. However, many adults deprioritize nourishing creative or innovative endeavors, with time pressure, fear of failure, and the pressure to conform at life and work often detracting humans from creativity and innovation.<sup>52,53</sup> The Western education system's focus on standardized testing and rote learning may not adequately nurture or value creativity, potentially stifling creative development in individuals.<sup>54</sup> Reliance on technology can also lead to children being trained out of creative thinking, especially when social media's more shallow, imitative, and homogenous use cases are prioritized over originality and authenticity.<sup>55</sup> These societal limitations, combined with digital distractions, create a default state for many that blocks the natural inclination for creative and innovative thinking and discourages the pursuit of knowledge deemed "superfluous" to core productivity goals.

### ***Harnessing AI to make us more: Creative and innovative***

The unconscious mind houses a plethora of creative insights buried beneath stress, distraction, and the constant pursuit of busyness and productivity. By automating tasks that do not require original thought and prioritizing key human traits, a welcoming environment for ideas otherwise squashed by more narrow or cynical thinking. To develop more sustainable creative and innovative solutions, how do we challenge ourselves to use newfound bandwidth to veer from the constructs that inform our day to day—like core business KPIs or, more broadly, a narrow worldview? Embracing activities like conversations, books, concerts, documentaries, and travel—rather than viewing them as counterproductive because they do not directly align with a to-do list—can foster boredom, awe, and inspiration - leading to a better understanding of oneself and purpose.

Even social media can be a vital source for creative stimuli, but the distinction between passive consumption that stifles creativity and innovation and active consumption that spurs it is the level of consciousness we bring to the table. By being active consumers, individuals can discern which aspects of their consumption—such as media, experiences, and purchases—are enhancing creativity and human traits, as opposed to those that are passively consumed to numb, distract,

<sup>52</sup> Teresa M. Amabile, "Attributions of Creativity: What Are the Consequences," *Creativity Research Journal* 8, no. 4 (1995): pp. 423–426, <https://www.hbs.edu/faculty/Pages/item.aspx?num=3119> (July 14, 2014).

<sup>53</sup> Spencer H. Harrison, Elizabeth D. Rouse, Colin M. Fisher, and Teresa M. Amabile, "The Turn Toward Creative Work," *Academy of Management Collections* 2022, Vol. 1, No. 1, pp. 1–15, <https://doi.org/10.5465/amc.2021.0003> (July 14, 2024).

<sup>54</sup> Rebecca Weicht, "Education systems can stifle creative thought. Here's how to do things differently," World Economic Forum, April 18, 2018, <https://www.weforum.org/agenda/2018/04/education-systems-can-stifle-creative-thought-here-s-how-to-do-things-differently/> (July 14, 2024).

<sup>55</sup> Michael A. Roberto, *Unlocking Creativity: How to Solve Any Problem and Make the Best Decisions by Shifting Creative Mindsets* (Wiley, 2019).

and disconnect from these traits. As self awareness improves, we can tailor our consumption diet to what feels authentic to us.

Further, as individuals become attuned to the emotions that ignite curiosity and purpose, effectively honoring that purpose depends on the ability to overcome limiting beliefs about conformity and perceived shortages of money, time, energy, talent, or educational access needed to unleash creativity and innovation. AI can assist in completing necessary “have to’s” and provide opportunities to confront limiting beliefs by offering more time and presence for deeper human interaction, as well as AI-based talk therapy tools when beneficial. By nurturing these seeds of purpose and leveraging AI-augmented creativity and innovation, these ideas can be developed and realized.

First, AI can help with divergent thinking—a crucial part of creativity known more widely as “brainstorming.” Divergent thinking involves generating multiple solutions to a problem and is a core component of creativity. By simply entering a problem or the start of an idea into an AI chatbot, leading small and large language models can aid in idea generation, challenging narrow views and surpassing limited knowledge. This should be an iterative process where AI sparks ideas, and humans expand upon them and re-enter prompts to enhance the quality of the brainstorm. AI's ability to synthesize datasets should not be intimidating; it can be used to provide insights when reconciling nuanced datasets or divergent sources, as long as there is a focus on ethics. This approach enables the incorporation of nuances in problem-solving to develop more informed, comprehensive solutions. Throughout this process, we can begin to apply convergent thinking, the creative process by which we narrow the brainstorm to find the single best solution.

The next step, involving the use of AI to assist in execution, was demonstrated in the pet adoption example. However, these steps can be optimized by AI at each stage. Many creative or innovative ideas never reach fruition due to execution barriers, so engaging AI to delegate tasks and overcome these hurdles is crucial for bringing ideas to the world and inspiring others to join the mission.

The potential benefits of AI to enhance creativity and innovation are particularly exciting at a time when sustainable solutions are urgently needed. AI holds the promise of opening up creative tools, education, and ideation - extending opportunities beyond those who can afford elite education and expensive tools. This creates the possibility of a meritocracy where anyone interested in learning, creating, and sharing ideas can do so without cost.

AI breakthroughs are already being made in climate, health care, and education. AI has the potential to help mitigate 5 to 10 percent of global greenhouse gas emissions by 2030—the equivalent of the total annual emissions of the European Union.<sup>56</sup> As new ground is broken by AI

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<sup>56</sup> Yossi Mathias and Kate Brandt, “Accelerating climate action with AI,” The Keyword, Google blog, November 20, 2023, <https://blog.google/outreach-initiatives/sustainability/report-ai-sustainability-google-cop28/> (July 14, 2024).

and human cooperation and these tools are disseminated more widely to passionate individuals and teams across borders, the impacts of discoveries are ripe for astronomical, distributed growth necessary to tackle such wide-scale, multi-stakeholder challenges.

The initial fears regarding AI threatening human value in completing rote tasks and encroaching on more human-like traits are reframed when AI is viewed as a partner that frees individuals to pursue creativity with more aligned intentions, time, and energy.

### **Physical Characteristics**

While this human trait might seem straightforward, today's Western labor culture has largely neglected our physical bodies. Only 28 percent of Americans meet the physical activity guidelines set by the Centers for Disease Control and Prevention. Technology jobs are conducive to excess sitting, blue light exposure, and burnout—which also contribute to a sedentary lifestyle outside of work. The physical labor market, in contrast, is extremely taxing on bodies with rote work, leading to injury and even early fatality.

America's "gym culture" reflects the limited time available and the non-walkable nature of many cities, leading to scheduled, intense physical activity rather than integrating healthy movement throughout the day. This culture can present a daunting challenge, discouraging many from exercising. There is an additional burden for those who struggle with body image and obesity or view the costs and time associated with exercising as unattainable luxuries. The gym works for some, but how might AI allow individuals to integrate physical movement more organically, orient exercise around community and nature, and support an intervention for health complications stemming from isolated, sedentary lifestyles?

### ***Harnessing AI to Make us More: Physically healthy***

As AI innovation pairs with the automation field to deploy AI-equipped robots capable of replacing physical tasks, it also raises the question: which physical elements in various industries serve human interests? In industries where physical labor is enmeshed like construction, cleaning, and hospitality, what physical work do humans want to retain and which tasks can be relinquished to AI in favor of potentially more fulfilling work? As mass disruption unfolds in these physical industries ripe for automation, it's critical to consider how to leverage AI to uplevel workers in their field or train new skill sets, cultivating passions humans haven't been able to explore due to the demands of their jobs.

For knowledge workers, AI's agentic abilities—which can streamline tasks that previously required humans to spend 8+ hours a day glued to a screen—present an opportunity to reconsider what physical environments, postures, and behaviors are most conducive to unleashing human traits. AI creates an opportunity to free individuals from traditional working routines and

integrate emerging research that demonstrates walking<sup>57</sup> and time in nature<sup>58</sup> throughout the workday can boost creativity and innovative performance.

While "play" and "arts and crafts" may seem like activities best left in the kindergarten classroom, using the body to play and hands to create are deeply human acts that date back to the Stone Age. Recess is proven to boost attention span, memory, and problem-solving,<sup>59</sup> while making art—musical, visual, or otherwise—for the sole purpose of making art is linked to stress reduction and higher emotional intelligence.<sup>60</sup> In addition to questioning the notion that work must be done at a desk and integrating physical activity into daily routines, it is worth reconsidering the idea that physical exertion is most productive when confined to a gym. Activities such as connecting with friends, revisiting an old hobby, playing a pick-up soccer game, or enjoying the backyard by painting a tree with watercolors may be more effective in unleashing human potential.

On a grand scale, AI's potential to enhance health awareness and improve medical systems is vast. Thrive AI Health is amongst the breakout AI health companies working to democratize an AI health coach—the technology will monitor which “conditions allow you to get quality sleep; which foods you love and don’t love; how and when you’re most likely to walk, move, and stretch; and the most effective ways you can reduce stress.”<sup>61</sup> AI's capacity to track these signals, identify patterns, and offer tailored recommendations like a “healthy, inexpensive recipe” offers the potential to surpass patient portals and generic health tracking devices.<sup>62</sup> While AI tools can augment lives by providing integrated, real-time health recommendations, they also offer the bandwidth to apply insights that might otherwise be overlooked when time and energy are limited.

Using AI to enhance human lifestyles and increase free time for individuals to be more attuned and respectful of their bodies could lead to a preventative health revolution. At the same time, advancements in medical treatments could reduce the cost of care for those in need. Virtual health assistants and remote monitoring have the potential to improve medical efficacy by alleviating the bureaucratic burdens on medical professionals, thereby freeing up resources for new medical breakthroughs.

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<sup>57</sup> Marilyn Oppezzo and Daniel L. Schwartz, “Give Your Ideas Some Legs: The Positive Effect of Walking on Creative Thinking,” *Journal of Experimental Psychology: Learning, Memory, and Cognition* 2014, Vol. 40, No. 4, pp.1142–1152, <https://www.apa.org/pubs/journals/releases/xlm-a0036577.pdf> (July 14, 2024).

<sup>58</sup> Chin-Wen Yeh, Shih-Han Hung, and Chun-Yen Chang, “The influence of natural environments on creativity,” *Frontiers in Psychiatry*, July 2022, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9363772/> (July 14, 2024).

<sup>59</sup> Vidar Ulset, Frank Vitaro, Mara Brendgen, Mona Bekkhus, and Anne I.H. Borge, “Time spent outdoors during preschool: Links with children’s cognitive and behavioral development,” *Journal of Developmental Psychology*, Vol. 52, October 2017, pp. 69-80 <https://www.sciencedirect.com/science/article/abs/pii/S0272494417300737?via%3Dihub> (July 14, 2024).

<sup>60</sup> Malaka Gharib, “Feeling Artsy? Here’s How Making Art Helps Your Brain,” *NPR*, January 11, 2020, <https://www.npr.org/sections/health-shots/2020/01/11/795010044/feeling-artsy-heres-how-making-art-helps-your-brain> (July 14, 2024).

<sup>61</sup> Sam Altman and Arianna Huffington, “AI-Driven Behavior Change Could Transform Health Care,” *Time*, July 7, 2024, <https://time.com/6994739/ai-behavior-change-health-care/> (July 14, 2024).

<sup>62</sup> Ibid.

## THE GREAT UNLEARNING

Fear around AI is warranted, but allowing this fear to limit access to a technology that can augment the intellectual, physical, emotional, and spiritual foundations for a purposeful life may only perpetuate inequality. AI requires input from diverse perspectives to reduce bias, and utilizing it to enhance collective consciousness can lead to better outcomes for sustainability at the individual, community, and global level. Integrating cross-cultural perspectives is crucial to avoid creating a new legacy of biased socialization, especially given the potential for unprecedented virality and network effects.

Entrepreneur Marc Andreessen highlighted AI's double-edged potential by stating, "*AI can make everything we care about better.*"<sup>63</sup> While financial gain will inevitably influence AI development, it is possible to learn from past technological revolutions, choose to protect and nourish human qualities, and guide AI companies to create tools that orient human contribution towards fulfillment and sustainability. By leveraging AI to support meaningful missions across socioeconomic and political lines, familiarity with the technology increases, and discernment of those attempting to misuse it improves. This approach fosters confidence in unique human contributions and their application during future AI industry transitions. If the human experience hinges on unlearning barriers to one's true self, AI provides the time to begin, the space to relearn values, and the tools to build a life aligned with one's potential and role in a larger ecosystem.

At this stage, it remains uncertain whether the question posed at the beginning—"Do we need to teach young people anything now that AI is here?"—can be definitively answered. Perhaps young people will lead the way by demonstrating what can be achieved when biases are unlearned, limiting beliefs are overcome, and an unparalleled tool for knowledge is utilized. If we get this right, the children who grow up with AI on their side will experience a clean slate, combined with a collective consciousness from which anyone can learn, grow, play, and realize the meaning they seek.

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<sup>63</sup> Marc Andreessen "Why AI Will Save the World," June 6, 2023, <https://a16z.com/ai-will-save-the-world/>

**APPENDIX: Exercises**

The first step to deepening humanity is to automate tasks that 1) consume time and/or 2) don't contribute to a sense of meaning or joy. Below are exercises to consider toward those dual goals:

**Exercise A: Automation of unfulfilling tasks:****Step 1: Task inventory**

- List all your regular tasks (work-related and personal)
- Focus in on tasks that lead to feelings of dread, procrastination, or take time—and require you to be at your desk for long periods

**Step 2:**

- Test: Input these tasks into a task management assistant, or ask a GenAI chatbot to help you complete them directly
- Ensure the accuracy and performance of each task, make a list of all tasks you can effectively outsource to AI, and log the hours you previously spent on those tasks for our next activity

**Exercise B: What will you do with your newfound time and energy preserved by outsourcing draining tasks?**

Step 1: Identify and tally the time saved by mindless/numbing tasks and observe. Consider: Does the energy you saved trying to achieve these tasks diminish the need to do mindless/numbing tasks after work—i.e., TV, video games, social media, or other activities in which you feel you are not fully present, engaged, or fulfilled?

**Step 2: Consider the following questions:****Self:**

- What was I passionate about in childhood that I may have neglected to pursue due to a scarcity mindset? (time constraints / realities of finances/securities / lack of talent)
- If I said time/financial constraints, can I give myself permission to explore this knowing that I'm preserving time and financial security by automating tasks that are a part of my money-making job?
  - Are there ways I can leverage AI to make more money to mitigate my concerns around financial security?
- If talent is my concern, how might I use AI to help expedite my learning, hold me accountable, and complement areas that are barriers to my pursuit of this curiosity/activity? (i.e., if I want to songwrite but am limited by guitar ability, how might I leverage AI to help me write guitar parts until I feel qualified with samples to bring to a human collaborator?)



## Relationships:

- Am I making others in my life feel valued, connected, and empowered?
  - AI has proven effectiveness in role-playing relationships scenarios in professional and personal environments. Prompt AI and insert the details of a situation limiting you, “I want to reflect on a past misunderstanding with [name of a friend or colleague], where [describe the situation in detail]. Analyze the situation objectively, with emotional intelligence, and ask me clarifying questions about the course of events, one at a time, to help me consider alternative approaches I would take if this happened again, with improved emotional intelligence. The goal is that I can approach new potential misunderstandings in a better way, so I don’t fall out with people.”<sup>64</sup>
  - Develop a prompt based on areas where you want to improve your human-skills (self-awareness, morality, creativity)
- Consider—how can I seek out relationships that are more aligned with the skills I’m trying to pursue in my self bucket? (Examples include developing relationships based on shared passions that may have been repressed—joining a book club, art club, nonprofit group for a cause you care about) If you don’t know where to start, ask AI to help you find virtual outlets across the globe or local opportunities to build a community oriented around your passions.

## Planet:

- What biases or limiting beliefs do I have based on my own socialization / world view? How might I leverage GenAI chatbots’ global knowledge as a way to identify my own social/cultural blind spots and expand my awareness of cross-cultural perspectives?
- How might I use time saved by AI automation / passions and causes realized by AI augmentation to better the world?
  - This pursuit can happen at the individual level, or the relationship level by gathering friends together, or by encouraging your company to leverage AI tech to accelerate social good initiatives. AI will make breakthroughs for urgent issues more feasible than ever, but we need humans to apply these breakthroughs and ensure solutions are implemented humanely and sustainably.

This self → relationship → planet approach has the potential to create a cycle of deeper consciousness and fulfillment. Becoming more aware of your limiting beliefs and connecting to yourself will prompt deeper connections to the relationship and planet, which will inform a greater sense of self-awareness. A recipe for sustainable AI entails upleveling our skills and drawing on our passions at the self level, determining how to orient them around something greater than ourselves, and recruiting other humans and AI to join in on our meaningful missions with their own unique contributions.

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<sup>64</sup> Jodie Cook, “5 ChatGPT Prompts To Instantly Boost Your Emotional Intelligence,” *Fortune*, December 13, 2023, <https://www.forbes.com/sites/jodiecook/2023/12/13/5-chatgpt-prompts-to-instantly-boost-your-emotional-intelligence/?sh=29d217f5670b> (July 14, 2023).