
CHAPTER

1

When the World Changed

Renting an apartment in Paris for part of the year, reading late into the evening, spending time with a soon-to-arrive grandchild, and more time with my wife, Pat, writing a new book—these were on my how-to-spend-my-sabbatical-year list of possibilities for when I would finally step down from the presidency of Southern New Hampshire University (SNHU) in June 2024. It had been a great twenty-one-year run working with my team to create the country's largest university, with two hundred and fifty thousand students enrolled, serving student populations too often neglected by traditional higher education, and inventing new models of education along the way. But it was time to assume the more contemplative and measured role of scholar, thinker, and writer.

Then November 2022 happened. OpenAI released Chat GPT to the public and the world changed overnight.

Like most people, my initial exploration of artificial intelligence (AI) for the masses began playfully. At a holiday dinner party, my laptop sat at the end of the table like a strange guest, and we asked ChatGPT to write about higher education in the form of a Shakespeare sonnet, then in the style of e.e. cummings, then with the voice of a 1930s gangster. We asked it to outline a three-day itinerary for an upcoming trip to New York, adding our preferences for museums, cuisine, and theater. Its responses were uncanny in their speed, responsiveness, and detail. In subsequent days, I asked it to design an Intro to Poetry course for me, providing parameters that included course outcomes, assignments, and activities. I asked it to teach me how to create pivot tables in an Excel spreadsheet. I uploaded a chapter from my book *Students First: Equity, Access, and Opportunity in Higher Education* and asked for a summary. In task after task, it performed exceedingly well. I was thunderstruck with the possibilities.

I had this experience with breakthrough technology before. In the 1980s, I was one of the first doctoral students at the University of Massachusetts to have my own word processor,

made possible through a friend at Wang Laboratories and his employee discount. I stood with a foot on each side of a new generational divide between those who typed (or paid typists) to produce essays, bottles of Wite-Out at their side, and those who used a word processor and paid no price for retyping whole pages when revising or making simple mistakes. Just a few years earlier, I typed my master's thesis using onion skin paper (look it up, kids) and cursed my many typos and corrections. Then I wrote my dissertation on my new word processor, sliding 5.25 discs in and out of the computer to do even simple corrections (goodbye Wite-Out), and yet feeling like I was working at lightning speed. It was the graduate student equivalent of going from a horse and buggy to a Model T. However, the real revelation came through a new campus writing lab with Digital Equipment Corp.'s Rainbow personal computers linked through a local area network. Because the full-time writing faculty would not go near these new machines, they ordered lowly teaching assistants like me to figure out how to use them to teach writing.

Task assigned, I brought my students in, and together we learned to use the computers. The students loved working on them and were engaged in ways I was not seeing when they were writing longhand in my regular classroom. They were more willing to revise their work, a task made easy by the "delete" key and ability to cut and paste. They loved online discussions, and when I turned on the anonymization feature, removing names from posts, I watched students otherwise silent in class find their voice, resulting in more robust online discussions. I was blown away and soon changed the focus of my research from literature to the nascent field of computers and writing. It was the start of the computer revolution, and thinking the world would be invented anew, I wanted to be part of it.

We readily understand the ways new technologies dramatically alter our ways of *doing* things. For example, transportation

technologies like railroads, cars, and airplanes radically changed travel and thus radically changed the ways we conducted trade, organized our lives, and remapped the landscape of human activity around the planet. In my research, I looked at the ways new technologies altered the *cognitive landscape* of societies, how we come to *think about* things. Because writing has been with us for so long and is something we learn to do so early on in life, we can forget that it is a kind of technology, a profoundly powerful one when it was introduced into ancient oral cultures with no scrolls, codices, or books available to reference when one could not remember something. Memorization was the single most important cognitive tool of a learned person, and what one remembered literally equaled what one knew. The arrival of writing did more than offer a new way to store information; it rearranged the mental landscape of entire civilizations. In a world of pure orality, knowledge lived in the body and the community—recited epics, genealogies held in memory, wisdom encoded in proverbs and proverbs encoded in rhythm. As Walter Ong observed, oral cultures thought in formulas and narrative because memory demanded it; thought must be portable and repeatable, wisdom was a living performance rather than a silent text.¹ Homer's *Iliad* and *Odyssey* are full of tropes, repetitions, and alliterative phrases because the poems were memorized and recited long before they were written down for posterity; those mnemonic devices simply made the lines easier to remember. To put knowledge on a surface—clay tablet, palm leaf, papyrus—was to liberate it from the fragile and *embodied* human brain and, paradoxically, distance it from lived context. The word is not the actual thing; it is an abstract signifier of the thing. Jack Goody called this transition “the domestication of the savage mind” not to disparage oral intelligence but to mark the way writing disciplines or transform thought into lists, categories, and abstract thought and analysis.² Whereas memory in an oral culture was one's most important

cognitive power, it faded as the primary intellectual virtue, much to Plato's chagrin, who railed against the new technology of writing because people would lose the power to remember. Turns out he was right. Where would we rank memorization today in terms of important cognitive skills? Knowing became not *holding* information but knowing where, and increasingly how, to *find* and interrogate it.

If writing externalized memory, print industrialized consciousness. When Johannes Gutenberg's press made identical texts reproducible at scale, the world did not just get books but new habits of mind. Reading became private and silent, a solitary act of interiority rather than a communal performance. The Reformation, the scientific revolution, and democratic politics are difficult to imagine without that shift. Ideas gained an independent life in pages and libraries, and with that independence came a revolution in skepticism and inquiry. The scholar no longer debated memory against memory but book against book, edition against edition.

These transformations—writing's cool logic, print's rigorous reproducibility—are reminders that every communication technology quietly changes the way a society thinks, and as such they change the world. Literate people developed analytic habits because texts made analysis possible; print-rich societies think in sequences and citations because printed pages reward such thinking. Eric Havelock argued that the Greeks did not merely invent literacy; literacy helped invent a new kind of Greek mind.³ It is a reminder of that old axiom that we shape our tools and then our tools shape us. And one wonders, looking at today's large language models (LLMs) and generative systems, whether we are again at such a threshold. Just as writing once freed thought from the breath, and print freed it from the scribe, AI may yet free cognition from the page itself, inviting us not only to ask *what*

we know, but *how* we will think when knowledge is everywhere and memory is optional. The past is not a mirror of what is coming, but it is a warning: meaningful technologies rarely arrive quietly, and they never leave the mind unchanged.

More than four decades after studying the relationship of technology to cognition, those first interactions with ChatGPT once again made me feel that the world was about to change—only this time more profoundly. First, the speed of adoption is dizzying: if generative AI was truly revolutionary, the revolution arrived fast. ChatGPT reached one million users within five days of its release and one hundred million users within two months.⁴ We have never seen a technology adopted with this speed.

Shortly after its release, I was in San Diego at the ASU+GSV Summit, the largest gathering of education technology entrepreneurs, investors, institutions, journalists, and companies in the country, a must-attend event for anyone interested in the intersection of technology and education, with over seven thousand attendees. I ran into my old friend and fellow Canadian George Siemens, a renowned researcher in learning science and analytics, widely credited with creating the first massive online open course, or MOOC. He had a joint faculty appointment at the University of Texas and the University of South Australia, and at the latter institution directed C3L, a world-class research lab full of data scientists and learning researchers. A prolific researcher and expert in AI and learning, Siemens has been cited over forty thousand times in academic journals and articles. He and his wife, Tanya Gamby, had just moved to Adelaide in South Australia. George and I sat outside in San Diego sipping coffee and sharing our sense that the world was utterly changed. That AI, around since the famous 1955 Dartmouth Conference at which the term was coined, finally had its catalytic moment with the arrival of ChatGPT. That everything—society, medicine, science, the

creative arts, technology, and yes, education—would or at least *could* be reinvented in dramatically new ways. We sat and wondered aloud about the role of humans if and when we are no longer the most powerful cognitive entities on the planet. What would we educate people to do, to think, to know? Indeed, would we have to rethink knowledge itself, or at least our relationship to it? This would be big. Like, invention of fire big. Like, invention of electricity big.

As our coffees got cold and we warmed to the subject, I said, “George, this is not public yet, but I will be stepping down from my role at Southern New Hampshire University in June 2024. Why don’t you leave your posts and join me, and we can reinvent learning together?” When I said it, we both paused, then simultaneously and nervously laughed out loud, a tacit commentary on the audacity of the goal (and the idea that two Canadian immigrants with humble roots might take on such a task). Even then, we were witnessing a rush to announce AI point solutions that might serve part of the learning ecosystem, such as AI tutoring and back-office functions like transfer credit evaluation. Companies that had been in the market a long time were quick to declare that they were “AI powered,” and one founder told me, “We have always been using AI. We just did not talk about it before.” George and I were uninspired by the sprint to announce AI-powered point solutions that might serve parts of the learning ecosystem, such as AI tutors and AI student support applications. Those solutions might be helpful (even if the claims sometimes felt a bit overheated), but we were asking bigger system questions and speculating on how we could use AI to *reinvent education* to improve it and make it available to the millions of people globally who did not have access.

We were inspired by the book *Power and Prediction: The Disruptive Economics of Artificial Intelligence*, which argues that the

full potential of AI is only unleashed when we use it in system redesign rather than a point solution within an existing system.⁵ We asked ourselves, “What would it look like if we could use AI to reinvent education wholly unencumbered by the way the existing system operates, giving no thought to accreditation or financial aid or traditional roles? What if we took a clean sheet of paper approach to the question, creating an AI-powered, human-centered model of education for the dawning Age of AI?” Our excitement at saying aloud what we were not hearing around us at the summit energized us, and then we shook on it and said, “Hell, let’s do it.” Goodbye Paris, that pile of books, any time to write. While we did not exactly know what we had just agreed to do together, I knew that long-awaited sabbatical would instead become a journey into the astonishing, puzzling, sometimes frightening world of AI and the opportunity to reinvent a model of education that felt to us increasingly broken, ill-suited for the new-world order, and out of reach of too many.

In the following months, George and I exchanged ideas and started to play with the ways in which AI might alter education. We started with existential questions and a growing conviction that the *epistemological* focus of education, centered on knowledge—what one should know and how we know—would shift to more existential and *ontological* questions of being, how we think about being human, in community, and in a world where we will coexist with knowledge machines far more powerful than we are. We also agreed that genuine personalization of learning is possible, a goal long promised and always unrealized despite earlier attempts and often grand claims. We imagined a future model in which thirty students in the same program would master the same skills and knowledge, but have thirty different experiences, pathways, and content, each having learning experiences precisely tailored for them. We wondered if we might actually

leapfrog personalized learning, that elusive goal of ed tech companies, and develop precision learning, the kind of n -of-1 understanding of a single learner that precision medicine was seeking with patients.

This was a profound notion. Education has largely been designed for the Industrial Age, with its need for large numbers of literate workers with higher-order skills. Needing to scale and measure performance, education adopted a one-size-fits-all delivery model that favored standardization and efficiency. If thirty students are enrolled in the same program, they will largely have the same experience, follow the same sequence of topics and activities, digest the same content—no matter what they know, how they learn, how they think and feel, regardless of their context and conditions. At almost every level, education is designed around the thing to be learned and how the instructor wants it learned (which is usually a reflection of how *they* learned it). George, one of the world's leaders in learning science, was convinced that AI would give us the tools to build powerful and dynamically updated learner profiles for each student, profiles that would serve up learning with a precision and efficacy that we have never seen in education. *Personalization*, the Holy Grail of education, would be in our grasp. Then we could move from one-size-fits-all education to student-centered precision learning, a paradigm shift. We could change the world of education.

Turns out we were thinking too narrowly. Tanya, a clinical psychologist with a thriving practice, was listening in and absorbing it all, then sent a kind of manifesto or white paper that just floored me. It was titled *Connectivism.AI: The Art of Being Human in the Age of Machines*, and she had written it when thinking about the ways AI might be used to address the mental health crisis sweeping the United States and much of the world, especially

among young people. As her paper, written with urgency and a mix of despair and hope, explains:

Education/learning/schools were developed to meet different challenges and needs of a period long past. If we look at schools as what prepares people best for the future, where most of the tasks of “knowing and knowledge” are done by the brain/smartphone in our pocket, then the entire need for an education is different. We are holding on to this old model past when it is relevant, like keeping sets of encyclopedias way past when they were useful. We got arrogant in our cognitive superiority ignoring all other ways of knowing and being that exist in the more than human world around us. But AI usurps our cognitive superiority. Humans will need to find our place in a world where being the cognitively superior agent is no longer our role.

- i. People have been circling around this awareness for a while.*
- ii. People are looking to reconnect to other ways of being. More connection to self, more connection to nature, more connection to others.*
- iii. Our isolated, piecemeal mastery and domination of the world is a failure.*

By ignoring the larger systems at play we have begun to destroy them.

- 1. The environmental system*
- 2. Our mental health*
- 3. Our food system*
- 4. Our body system*
- 5. Our communal systems*

AI may be a huge opportunity to rebalance these systems as it will free up time to teach and learn and interact differently—there will be more time for being human in a complex system, if AI is handling the mundane details, drafting our documents, doing our computation, etc.

I knew George well but had never met Tanya. I called her and we talked through her ideas, sharing our sense that the world is increasingly broken, that we have to use technology not to replace human engagement and relationship, but to enhance it. Her vision took us from a concentration on education to a broader focus on human development. I knew she had to join us, and our duo became a trio.

I shared our thinking with the SNHU Board of Trustees and argued that AI would change the educational landscape and could lead to the next generation of SNHU's learning model. The board eventually approved a \$25 million investment in what became Matter and Space, the AI and education company George, Tanya, and I cofounded in June 2023. We started the company during my final year at SNHU. Two years into the work, on the eve of our September 2025 pilot launch with one thousand students across eight universities, SNHU decided to bring the platform in-house for its sole use, seeing it as a next-generation platform for its massive student population. George, Tanya and a small internal team continue to work on the platform at the time of this writing.

While we started out to build a learning platform, we came to call it a *human development* platform. At the heart of the platform, which we called Learning Environment 1 or LE-1 (Ellie to our eventual student testers), is a learner profile George originally sketched out on a napkin and that ingests myriad data, updated in real time, shaping each student's experience in the moment. LE-1 integrates learning, well-being supports, and soft-skills development, and does so employing multiple LLMs, agents, knowledge graphs, and machine learning along with generative AI. It integrates with and pulls data from wearables, such as the Apple Watch, Fitbits, and WHOOP bracelets, and we were working on integrating smart glasses, which we believe will be the key device of the future, linking users and their AI to the

physical world around them. We were building LE-1 to be radically affordable, given our commitment to serving those who cannot afford postsecondary education and addressing the global need for affordable, high-quality education. LE-1 was our attempt to reimagine education as a dynamic system that develops the whole person, with broader human impact than the mere learning of content.

That broader vision for how AI might transform the world by democratizing high-quality education in ways that could make students feel seen and well supported was rooted in our own experiences. As immigrants and first-generation college graduates, George and I have experienced firsthand the power of education to transform a life. I can name the three teachers who had the most impact on me—one in sixth grade, another in high school, and one in college—and it was access to affordable, high-quality postsecondary education that opened career and other opportunities for me. I also know my experience is increasingly out of reach for too many people in the United States and globally. Too many learners do not have a teacher who makes them feel like they matter, who mentors them the way I was mentored. Too many people cannot afford high-quality educational programs and, in much of the world, there just are not enough seats. Moreover, higher education remains largely built for traditional age students pursuing two- and four-year degrees.

I had worked hard to address this shortcoming of the postsecondary system during my time leading SNHU. It grew to be the largest university in the United States because we focused on learners juggling full-time jobs, parenting, and too little money. They chipped away at degrees over time, like the long-haul truck drivers who would park their rig every night at a rest stop, then open their laptop, log on, and be a student for a couple of hours before getting some sleep. They joked that they earned their degree “in forty-eight states.” There were also the refugees we

educated in camps in Rwanda and Malawi, living on food rations and dreaming of life outside the camps. I realized we were not only in the business of education but also in the business of hope. Matter and Space came about because we believed we could use AI to give any learner access to the best knowledge and instruction, to the support for their well-being, to the soft skills necessary for success and advancement, and do so at a fraction of the cost of most education. And that we could harness personalization and AI's dialogic nature to make students feel like they matter when little else around them sends that message.

But this book is not about the two years we spent building Matter and Space and its breakthrough LE-1 platform. We write to share what we are learning about AI and, more important, to pose the big questions with which we are grappling. While our personal experiences and desire to make sure the transformational educational experiences we had are available to all, the questions we take up are situated in tectonic historical and societal shifts. Our larger contextual framing comes from Carlota Perez, the British Venezuelan economist and author of the seminal *Technological Revolutions and Financial Capital: The Dynamics of Bubbles and Golden Ages*. She reminds us that we remain in the turbulent transition period of a revolutionary, world-changing technology in which the pace and nature of technological change is outpacing our ability to evolve our thinking and systems. She would say we have been here before: a dazzling new technology bursts onto the scene, attracting torrents of money, lionizing its inventors, and promising to change everything.⁶ And it does, but not for everyone, and not all at once. The early days, the “installation period” in her framework, are a heady mix of speculation, experimentation, and disruption. Financial capital runs the show. Fortunes are made. But the institutions, policies, and cultural norms built for the last era lag, ill-suited to manage the upheaval.

That is where we are with AI. The large AI companies are releasing new versions almost monthly, handling ever more complex tasks and moving beyond text to video, audio, vision, robotics, and instant translation while building massive data centers costing billions, eating up energy, and damaging the environment. The technology is racing ahead—generating code, analyzing medical images, tutoring students, and outperforming humans in myriad domains—while our rules for using it responsibly are being written in real time (and not very well). Witness the campus debates about banning AI in courses and its implications for academic integrity. Our pedagogy and assessment practices have not kept up. In the meantime, certain jobs are already disappearing or changing beyond recognition. Skilled professionals are wondering whether the thing they have spent a career mastering will still matter. A senior executive at a global bank shared that the company plans to cut its workforce by 30 percent over twenty-four months. The unemployment rate of recent computer science graduates is twice that of art history majors.⁷ Meanwhile, dizzying wealth and influence are concentrated in a small circle of companies and investors.

Perez warns that this is the dangerous stretch. The benefits of the new technology are real but unevenly distributed. Disruption hits hardest where skills are slow to adapt and safety nets are thin. Social tensions grow. In past technological revolutions, this is when political backlash, mistrust, and even outright resistance to the new paradigm surged. These are periods when wealth inequality becomes extreme, populism rises, wars erupt, strongmen leaders emerge, monopolies dominate, and voter discontent increases. In every democratic election around the world last year, the incumbent party was deposed, whether left or right, except for Mexico and South Korea, and South Korea changed over months later after a political crisis. Sound familiar?

We are in the AI earthquake and it will not be soon over. The hopeful turn, in Perez's telling, comes only when we cross the bridge into the "deployment period," when the technology's potential is matched by the policies, education systems, and institutional reforms that let the benefits flow more broadly. In the Industrial Revolution, it was public schooling, labor protections, and infrastructure investment. In the Information Age, it was the spread of personal computing, the internet, and new industries that created millions of jobs.

For AI, the same challenge looms: building the guardrails, training systems, ethical frameworks, and equitable access that turn a powerful, sometimes disorienting invention into the backbone of a shared prosperity. Until we do, Perez would say the future will feel less like an open door and more like a locked one, its key held by a few.⁸ But with AI, there is a twist at which Perez's earlier case studies can only hint. Steam, electricity, mass production, computing—each expanded what humans could do. But none directly stepped into the territory we have long claimed as ours alone: the capacity to reason, to imagine, to decide, to connect. AI is not just a faster loom or a bigger engine. It is an encroachment on intelligence itself, the thing we have used for centuries to define what it means to be human.

That is why AI feels different. It is not just an economic disruption; it is an existential one. If a machine can write a persuasive essay, diagnose an illness, or even feel like a friend or therapist, we start to ask uncomfortable questions: What is left for us? What does human judgment mean in a world where algorithmic decisions outperform our own? Where do we draw the moral lines about what only a person should do? How are we indeed different . . . and is that enough?

Perez would optimistically point to the eventual turning point ahead, the moment when we move into the deployment period and the technology's benefits are finally unlocked for the

many, not just the few.⁹ In every previous technological revolution, the chaos of the transition gave way to a new Golden Age, in Perez's telling. That critical transition required new laws, public education, infrastructure, and institutions designed for the new reality. With AI, it will also mean building ethical frameworks, guardrails, and cultural norms that decide not just *how* the technology is used, but *what parts of being human we refuse to outsource*. Our hope is that education—high-quality, personalized, engaging, and relevant—is available to all and treated as a human right, part of a possible new world order characterized by abundance and not the scarcity that today limits access, a greater range of options, and affordable choices for far too many learners.

Until then, we are in the messy middle, where the possibilities are thrilling, the risks are disquieting, and the future feels less like an open invitation and more like a debate over what it even means to be invited at all (and many would like to be left off the guest list). I had the opportunity to have dinner with one of the world's leading and best-known technologists (Chatham House rules prohibit sharing the name) and he said, "If I had a switch that could pause AI development to let us catch up in our thinking, I'd use it right now. We do not know how to rethink society for the world of abundance that AI will create." The man is a techno-optimist: he believes AI can create prosperity for all, eliminate the need to work, and address intractable challenges such as climate change, curing diseases, and extended life spans. In that sense, even with deep concern over bioterrorism and AI warfare, he echoes other techno-optimists like Ray Kurzweil, Sam Altman, and Marc Andreessen, author of the much-debated *Techno-Optimist Manifesto*, but he is more thoughtful about the existential questions of how we will derive meaning, how societies then operate, how economics is redefined. "How much baseball can we watch?" he quipped.

Those are the big questions, the province of philosophers, psychologists, sociologists, ethicists, and theologians. In a keynote talk I gave on AI and education in Cuzco, Peru, in 2024, I turned to the Catholic priests in the audience, of which there were many given the large number of Catholic universities across Latin America, and said, “Fathers, this is your time. You have always been about the big questions like ‘Why are we here?’ and ‘What is our purpose?’” And while I was admittedly pandering a bit, I was also sincere and they nodded in happy affirmation.

The context and questions are a reminder that we are in the middle of a complex societal transition, full of unknowns, and that the technology fueling this change is evolving at warp speed. What we can say of the technology today is likely to be outdated tomorrow, but we can ask good questions. Indeed, certainty at this moment should be suspect and we simply need better questions, or the right questions. In the chapters that follow, we share the questions with which we grapple as we try to *rethink* education and human development for the new world order, as Antonio Gramsci would call it.¹⁰ Because education should be about the important questions of purpose or vocation (and by extension work and career), community and society and one’s role in them, and the tools for a life of flourishing, meaning, and impact, we will inevitably link back to the larger context just outlined, but through the lens of one key question: *What is the university that the world needs next?*

The chapters that follow address the hardest questions with which we wrestle as we built the Matter and Space platform:

- What will be the future of work and how will that then reshape what universities offer?
- Will education move from an epistemological to ontological focus, worrying less about what learners need to know and more about how learners need *to be* in the world?

- What does it mean to live alongside a new form of alien being, one that is more intelligent and seems human in many ways, and in a world in which many will prefer their AI companions to their human companions?
- Can we make high-quality, personalized education available worldwide for free or almost free?
- What of the incumbent system? How does it evolve? Will we need it or want it in the future? What will be the role of the faculty member in the future?

Are we techno-optimists? It depends on the day. As educators, we think these are the most fascinating questions we can explore. As people whose lives have been transformed by education and amazing mentors and teachers, we love our industry, but we also are painfully aware of how it is falling short. It leaves too many people behind, remains too far out of reach of too many globally, lies increasingly out of step with what society needs, and is often overly occupied with itself and not focused enough on students. Rethinking education for the emerging world is the most powerful tool we have for getting the Age of AI right.

We could sit, wait, and wring our hands, waiting to see how this all plays out. After all, we already know all the ways the world could get it wrong. We have seen *2001: A Space Odyssey*, *Her*, and *The Terminator*. Or we can try and shape the future, at least our corner of it, and be proactive. In the pages that follow, we invite the reader to join us on the journey, think about the questions, and imagine with us a future in which education and AI can help fix a world that feels deeply broken.

Some final notes to the reader. While the three of us collaborated on the book in its entirety, I (Paul here) have taken the role as lead author, thus the first-person point of view to simplify matters. George contributed much of the chapter two primer on AI,

and most of the thinking for chapter five on precision learning, while Tanya is the intellectual force behind chapter four. I wrote the remaining chapters, and George and Tanya's comments and edits greatly improved them. That said, any shortcomings of the book are undoubtedly my fault; George and Tanya are the best of collaborators. We derived so much of what we share in this book from our actual *practice*, our working to build much of what we outline in the book. We have been immersed in AI these last two years (far longer for George) and write as practitioners, which means we often got things wrong along the way when working on LE-1. We are grateful for the missteps, as we often learned more from them than from our successes.

I used AI in the writing of this book, and because I believe that transparency in the use of AI is an ethical imperative, I identified those uses in the AI Disclosure.

Perhaps the most painful aspect of AI writing (at least to me) is the way it has ruined the em dash for everyone by overusing it. It has long been one of my favorite grammatical devices but has become a signal that screams "AI wrote this text." I assure you, if you come across an occasional em dash in the pages that follow it was not produced by AI. I reluctantly and mostly abandoned the em dash, but at times could not help myself.

The chapters that follow can be read as a series of essays, but we hope the through lines are readily apparent. The chapters are as follows:

- Chapter two: A primer on AI. I debated including this, but I see so much careless throwing around of technical terms and a frequent casting of AI as a *new* technology, I thought it was important for readers to have a brief overview of what is, in fact, a seventy-year-old technology (a combination of technologies, really) that did not start with the release of Chat GPT 3.5 in 2022.

- Chapter three: This chapter outlines the idea of an emerging “care economy” as white-collar jobs in the information economy get displaced by AI, and the need for higher education to more fully embrace its mission concerning ontological and existential questions, a mission more about developing better humans than training for jobs.
- Chapter four: We explore anthropomorphism, mattering, and what it means to live and learn alongside this new alien intelligence we have created.
- Chapter five: I outline the ways AI can enable us to leapfrog mere personalized learning to breakthrough precision learning, fundamentally changing the longstanding one-size-fits-all models of education that emerged with the Industrial Age.
- Chapter six: I get more focused on the university itself and the ways universities need to address the emerging Age of AI for which they are preparing their graduates.
- Chapter seven: Here the focus is on the role of the faculty member, especially as knowledge transfer is more effectively delivered by AI-driven platforms like the one we were building at Matter and Space. I posit the idea of the faculty member as a curator of community, more focused on relationship and human development than a discipline.
- Chapter eight: This one moves from universities to the larger ecosystem in which they exist, including questions of credentials, assessment, accreditation, and equity and access.
- Chapter nine: I finish by opening the aperture again, challenging our sector to rethink its role, to broaden the definition of education, and to elevate itself, to dream bigger, about what universities can be in a new world order.

George, Tanya, and I are excited about the possibilities for reinventing higher education, realistic about just how darn hard that will be, sober about the pains of the transition period, and absolutely convinced that a higher education system that moves from workforce training to developing flourishing human beings is the answer to an increasingly broken system of learning in an increasingly broken world. Tectonic shifts are underway, the ground is shaking beneath our feet, and while we fret about the damage being done, we are inspired by what is possible.