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## Evolution toward Intelligence without Consciousness? Harari's World History

David E. Nye

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Yuval Noah Harari's three books, *Sapiens: A Brief History of Humankind*, *Homo Deus: A Brief History of Tomorrow* and *21 Lessons for the 21<sup>st</sup> Century*, have sold more than 12 million copies. This review will not summarize their 1,400 pages so much as characterize their overarching argument. Harari has a Ph.D. from Oxford and teaches world history at Hebrew University, but his writing is more popular than academic in tone. There are few footnotes. A chapter in *Sapiens* on "The Marriage of Science and Empire" has just ten notes, and a chapter on capitalism has only four. Harari usually ignores rather than disputes alternative theories. In *Sapiens*, he treats Karl Marx as a religious thinker and asserts that Adam Smith's *The Wealth of Nations* is "probably the most important economics manifesto of all time."<sup>1</sup> He displays no awareness of how business historians have reconceived the corporation during the last half century, preferring to invoke the tired trope of the "invisible hand" that was decisively undermined in 1977 by Alfred Chandler's *The Visible Hand* with more decisive critique in later works such as Philip Scranton's *Endless Novelty*.<sup>2</sup> Smith's "invisible hand" theory was adequate to comprehend the economy of 1800 but became increasingly inadequate after c. 1840.

As in this case, Harari's bibliography is often haphazard and his knowledge of some subjects inadequate to formulate good questions, much less answer them. He proclaims that

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<sup>1</sup> Harari, *Sapiens*, 254, 282, and 348.

<sup>2</sup> Chandler, *The Visible Hand*, 14–16; Scranton, *Endless Novelty*.

societies are held together by myths, or stories, but he pays no attention to literary theorists on the structure and function of narratives, and he fails to underpin his discussion with any explicit theory.<sup>3</sup> He might have read John M. Staudenmaier's *Technology's Storytellers*, which would have revealed that his three books are an egregious example of the externalist narrative, an approach rejected by most historians of technology since the 1980s.<sup>4</sup> However, Harari does not refer to any historians of technology. Given his sources, it is not surprising that he has few new ideas but repackages many old ones. As a preview to his thinking and an example of how he addresses the reader, consider these lines: "If you don't know what to do with the power to engineer life, market forces will not wait a thousand years for you to come up with an answer. The invisible hand of the market will force upon you its own blind reply."<sup>5</sup> Invisible hand? Blind market forces?

An externalist approach usually takes up large questions and makes sweeping assessments, and *21 Lessons for the 21st Century* is no exception. It confronts disillusionment with liberal democracy, technological unemployment, terrorism, fake news, and other ills. He declares "My agenda here is global. I look at the major forces that shape societies all over the world and that are likely to influence the future of our planet as a whole."<sup>6</sup> He takes a similar approach in his earlier two volumes. *Sapiens* starts with the emergence of human beings in Africa and ends with their domination of the world. The sequel, *Homo Deus*, selects several trends and then projects them into a future when human beings have successfully enhanced their brains and bodies until they are poised to escape death.

The opening chapter of *Homo Deus* argues unconvincingly that human beings have nearly abolished famine, plagues, and warfare. However, in 2021 the United Nations estimated that 957

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<sup>3</sup> Harari, *Homo Deus*, 181–207.

<sup>4</sup> Nye, *Technology Matters*, 17–66.

<sup>5</sup> Harari, *21 Lessons for the 21st Century*, xviii.

<sup>6</sup> Harari, *21 Lessons for the 21st Century*, 14.

million people in 93 nations do not have enough to eat.<sup>7</sup> This problem will almost certainly worsen due to overpopulation, global warming, drought, COVID-19, pollution, and species extinction. Harari does not confront this crisis, but rather cherry-picks convenient historical examples to suggest that in the long-term view, humanity today is doing better than ever. He also claims that we can now control and cure new diseases. Yet hospitals around the world struggle against bacteria that are resistant to antibiotics. Just before the COVID-19 pandemic, he declared that “both the incidence and impact of epidemics have gone down dramatically in the last few decades.”<sup>8</sup> That might have seemed true before 2019, but it is not credible in 2020–21, after a pandemic has hammered the world economy and killed thousands of people every day. True, teams of researchers have produced vaccines, but public behavior has undermined their efficiency. And is humanity about to abolish warfare? Consider the Middle East where Harari lives. Israel remains in perpetual conflict with the Palestinians. Saudi Arabia and Iran are fighting a proxy war in Yemen. The ongoing Syrian civil war that began in 2011 has killed 0.5 million people, uprooted 11 million including 5.6 million refugees, and witnessed the use of poison gas.<sup>9</sup> In Afghanistan, after two decades of conflict, the Taliban defeated the Americans, and the nation is descending into civil war. This is only a partial list from one region. Worldwide, military budgets in 2020 increased to just under two trillion U.S. dollars, even as the world’s gross domestic product declined by 4%.<sup>10</sup> In short, the imminent victory over famine, disease, and war proclaimed in the opening chapter of *Homo Deus* may be exciting news to some readers, but these assertions provide the book with an

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<sup>7</sup> United Nations, Food Systems Summit, accessed July 29, 2021: <https://www.un.org/en/food-systems-summit/news/2021-going-be-bad-year-world-hunger>

<sup>8</sup> Harari, *Homo Deus*, 12.

<sup>9</sup> BBC, “Why Has the Syrian War Lasted 10 Years?” accessed July 29, 2021: <https://www.bbc.com/news/world-middle-east-35806229>

<sup>10</sup> Stockholm International Peace Research Institute, “World military spending rises to almost \$2 trillion in 2020,” accessed July 29, 2021: <https://www.sipri.org/media/press-release/2021/world-military-spending-rises-almost-2-trillion-2020>

unstable foundation. For if the description of the present is flawed, why believe its predictions about the future?

Harari's argument is not primarily a story about people who win battles, invent labor-saving devices, create useful institutions, uplift the downtrodden, or conquer adversities. Instead, large forces rather than individuals shape history. Railroads, steamships, computers, and other technologies emerge when needed, but how these inventions came about is never explained, and such things as the cotton gin, the chemical industry, or the assembly line are not in the spotlight. Nor are the forces that shape this history epitomized in particular cultures, such as ancient Greece and Rome. Harari thinks it self-evident that cultures have been merging for a long time, and that, "In recent generations the few remaining civilizations have been blending into a single global civilization."<sup>11</sup> One could make a case for the alternative proposition that societies are becoming more heterogeneous and disunited. The USSR, Yugoslavia, and Czechoslovakia all broke apart. Sudan split into two nations. Britain pulled out of the European Union. Scotland threatens to leave the United Kingdom. Lebanon is tearing itself apart. The Kurds demand a separate state. Greenland wishes to be more independent of Denmark. A separatist war rages in Ethiopia. Taiwan resists absorption into China. The divisions within the United States also continue to deepen, challenging its questionable reputation as an exemplar of assimilation. The idea that humanity is evolving into a single world civilization (and indeed whether this is desirable) has been debatable at least since the collapse of the Roman Empire.

This is not an ideological history that celebrates capitalism, liberalism, conservatism, socialism, or another ideology. Rather, it emphasizes the development of systems and tools, such as human speech, agriculture, writing, and mathematics. For example, in *Sapiens*, Harari explains

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<sup>11</sup> Harari, *21 Lessons for the 21st Century*, 99.

that, as early agricultural societies grew, they functioned poorly before they invented writing and accounting. Until then, they struggled to keep track of how much they had produced, what taxes had been paid, or other vital information. The earliest name of any historical person appears on a Sumerian clay tablet from more than 5,000 years ago, and it is not the name of a king or a poet but of an accountant.<sup>12</sup> In Harari's history, generals, politicians, authors, and artists are less important than tools and systems. Nor does he celebrate inventors and entrepreneurs. He argues that people did not intentionally domesticate wheat but rather gradually spread its wild seeds, made it an increasingly important part of their diet, and over millennia helped it replace other wild grains. As wheat became a dominant crop, triumphing over rival plants, hundreds of millions of human beings became dependent on growing, storing, and processing that grain. In a sense, wheat domesticated humanity, suggesting how other adaptations would reshape society.

Harari argues that change is driven less by planning or intentions than by the quest for food, pleasure, comfort, and power. This is a quest for happiness as defined by Jeremy Bentham's psychology, in which the experience of pleasure and pain "alone determine everything we do, say, and think. Bentham's successor, John Stuart Mill, explained that happiness is nothing but pleasure and freedom from pain."<sup>13</sup> Fulfilling human desire is at the center of this liberal quest for self-realization. But, Harari argues, "If we understand that our desires are not the magical manifestations of free choice but are rather the product of biochemical processes (influenced by cultural factors that are also beyond our control), we might be less preoccupied with them. It is better to understand ourselves, our minds, and our desires than to try to realize whatever fantasy pops into our heads."<sup>14</sup> Note that Harari dedicated *Homo Deus* to his teacher, the late Satyanārāyan

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<sup>12</sup> Harari, *Sapiens*, 139.

<sup>13</sup> Harari, *Homo Deus*, 40.

<sup>14</sup> Harari, *21 Lessons for the 21st Century*, 305.

Goenka, a leading practitioner of Buddhist meditation.

Harari does not write about the process of invention or the varied social constructions of particular technologies. Instead, he treats technology as a nearly automatic outgrowth of capitalism and science.<sup>15</sup> In these 1,400 pages, technology remains an undefined concept that refers to whole fields of endeavor or to autonomous processes. Harari asserts that “though technology holds many wonderful promises, my intention here is to highlight mainly its threats and dangers,” and he suggests “we need a better grasp of the challenge technology poses.”<sup>16</sup> He argues that “Government regulation can successfully block new technologies even if they are commercially viable and economically lucrative.”<sup>17</sup> Yet such blockades are only temporary delays. Despite present-day opposition, he expects genetic engineering of human beings will soon win widespread acceptance. During “the last century technology has been distancing us from our bodies,” and “biotechnology and artificial intelligence” are historical actors that “now seek to change the very meaning of humanity.”<sup>18</sup> In Harari, “technology” refers to a deterministic force that governments may slow down or speed up, but that ultimately is governed by the market’s “invisible hand.”<sup>19</sup> It is so ubiquitous and powerful that nation states cannot control it: “Technology has changed everything by creating a set of global existential threats that no nation can solve on its own.”<sup>20</sup> Harari’s work illustrates all too well that technology is a slippery concept that facilitates sloppy thinking. He would have benefitted from reading Leo Marx or Eric Schatzberg on the term “technology.”<sup>21</sup>

Harari regards the stories that human beings tell themselves to be inherently misleading,

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<sup>15</sup> Harari, *Sapiens*, 312–15.

<sup>16</sup> Harari, *21 Lessons for the 21st Century*, xvii and 17.

<sup>17</sup> Harari, *21 Lessons for the 21st Century*, 34.

<sup>18</sup> Harari, *21 Lessons for the 21st Century*, 89, 216.

<sup>19</sup> Harari, *21 Lessons for the 21st Century*, 216.

<sup>20</sup> Harari, *21 Lessons for the 21st Century*, 124.

<sup>21</sup> Marx, “Technology”; Schatzberg, *Technology*.

creating illusory meaning where there is none. He closes his third book by advising the reader to adopt the practice of meditation to understand reality, shorn of ideology and illusions of the self. From this perspective, his first two books explore myths that depict human history as the triumphant journey of an insignificant African ape toward immortality. Yet this triumph ends in tragedy. For the price of humanity's access to godlike power may well be a future life trapped in digital delusions, as we lose the ability to understand ourselves. *Homo Deus* predicts that, "In pursuit of health, happiness, and power, human beings will gradually change first one of their features and then another, and another, until they will no longer be human."<sup>22</sup> In the age of "techno-humanism," this will entail upgrading both mind and body. But should humanity lose control of this process, as seems likely, it could decouple consciousness from intelligence. "We may successfully upgrade our bodies and our brains, while losing our minds in the process," creating beings who are unable to "pay attention, dream, or doubt."<sup>23</sup> Harari warns that, "In the near future, algorithms might bring this process [of self-delusion] to completion, making it well-nigh impossible for people to observe the reality about themselves. It will be the algorithms that will decide for us who we are and what we should know about ourselves. For a few more years or decades, we still have a choice. If we make the effort, we can still investigate who we really are. But if we want to make use of this opportunity, we had better do it now."<sup>24</sup> For Harari, the central crisis humanity faces is neither warfare, nor pandemics, nor global warming, nor famine, nor pollution, nor terrorism, nor overconsumption of the earth's resources, but rather a misguided yet possibly unavoidable evolution toward intelligence without consciousness.

In Harari's world history, there is no discussion of the relative importance of economics,

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<sup>22</sup> Harari, *Homo Deus*, 56.

<sup>23</sup> Harari, *Homo Deus*, 422-23.

<sup>24</sup> Harari, *21 Lessons for the 21st Century*, 323



politics, geography, science, capitalism, technology, religion, literature, genetics, race, gender, and other factors. Avoiding such methodological questions, he constantly shifts his focus. Capitalism is the primary force in one chapter, while in another biology and genetics play the dominant role, and in yet another the analytical power of science holds sway. In this farrago of multiple causation, technology remains largely a black box, which means that inventors, entrepreneurs, and consumers are assigned small roles in this version of world history. This antiquated externalist methodology turns technology into an abstract, autonomous agency.

In significant respects, Harari's work resembles *The Outline of History*, published by H. G. Wells in 1920. Its 1,100 pages begin with evolutionary theory and then trace humanity's origin and rise, the succession of empires, and the gradual acquisition of scientific knowledge and technological skill. Like Harari, Wells predicted the eventual unification of all humanity, the consequent decline of warfare, the mastery of disease, the continual advance of science, and eventual migration beyond the earth. Wells paid more attention to inventors and inventions than Harari does, though Wells could not foresee the importance of the computer. In 1923, he published *Men Like Gods* (the title even anticipates *Homo Deus*) where he predicted that the immediate future would be overpopulated and belligerent, but it would be followed by humanity's perfection, facilitated by technical improvements. In short, Wells outlined much of Harari's argument.

Yet Harari's story is more pessimistic and less triumphant than it first seems. *Sapiens* concluded that immortality was imminent and that his readers were likely among the last mortal generations. *Homo Deus* ended with a vision of humanity immersed in a vast information system, in a society where a "relentless flow of data sparks new inventions and disruptions that nobody plans, controls, or comprehends." This future would be shaped by "the invisible hand of the

dataflow.”<sup>25</sup> Harari argues that humanity has seldom controlled its history, which has been guided by desires, genetic predispositions, markets, bio-chemical algorithms, and data flows that are increasingly coordinated by artificial intelligence. Rather than standing at the apex of creation, “humanity will turn out to have been just a ripple within the cosmic dataflow.”<sup>26</sup> Indeed, human beings could soon be extinct. It seems pride has gone before a fatal fall. Humanity has been merely a means, not an end, and consciousness will perish, replaced by artificial intelligence. Harari’s third volume treats the present as a perilous epoch, as a narrow window when the outlook for consciousness is dire, the ability to resist technology is weak, and the best recourse is meditation. Readers are invited to see themselves as the temporary result of humanity’s success during the last 75,000 years. However, they are advised that free will is an illusion, that all stories (including their personal story) are falsifications, that technology is rapidly taking control, and that the window of consciousness is about to close. Immortality turns out to be a victory for science but checkmate for humanity.

Like Wells’s *Outline of History*, these volumes recycle nineteenth-century ideas, dressed up with new examples, using Smith, Bentham, and Mill as guides to the future. A great deal of important research is missing from the argument, notably continental philosophy, business history, literary theory, and the history of technology. Harari’s compendium of examples and metaphors oversimplifies the past, negates cultural differences, and espouses simplistic conceptions of narrative, invention, and human nature.

James Lovelock reached similar conclusions in *Novacene*. He too anticipates that human beings will be enhanced and then replaced by intelligent machines, though he does not advocate taking up meditation. As he concludes, Lovelock remarks, “but just as we do not mourn the passing

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<sup>25</sup> Harari, *Homo Deus*, 449.

<sup>26</sup> Harari, *Homo Deus*, 460.

of our ancestral species, neither, I imagine, will the cyborgs be grief-stricken by the passing of humans.”<sup>27</sup> He imagines this genocide as an inevitable evolutionary outcome that will simultaneously decimate all races and nations. This scenario is hardly persuasive. It posits invention without inventors. It imagines technological change as a sudden wave that has an impact everywhere, rather than beginning with innovators working on AI in specific places, followed by entrepreneurs seeking to achieve efficient production, while corporations and nations struggle to dominate new markets. Railroads did not appear everywhere at once, nor did any other transformative technology. Electric lighting first appeared in just a few locations and after 150 years has not reached everywhere. No previous technological change occurred in the way that Lovelock or Harari suppose artificial intelligence will take over the world. This conception of sudden autonomous historical change is fundamentally flawed, a kind of magical thinking in which the reader is invited to be passive and resigned. It denies that each technology is shaped by cultures, inventors, and users. It pretends that it makes no difference whether a technology is developed and used in China, Sweden, Greenland, Australia, or Brazil. Harari’s argument that all cultures are merging into a single world civilization becomes the prelude to imagining the death of a supposedly homogenous humanity that will be replaced by nationless artificial intelligence (AI). However, AI is hardly neutral, reflecting the culture, gender, and class position of those who write the code.

This externalist argument writes human actors out of history and ignores the differential uses of technologies, which by no means have identical consequences for all classes, genders, religions, or cultures. An impoverished sense of the complexity of technological change and a serene ignorance of technological history allows Harari and Lovelock to imagine progress toward

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<sup>27</sup> Lovelock, *Novacene*, 111.

a wasteland of information flows where diversity withers, cultures are homogenized, and human consciousness disappears. Lovelock views this transformation with equanimity, pompously asserting that humanity will die out, but “our contribution will not be entirely forgotten as wisdom and understanding spread outwards from the Earth to embrace the cosmos.”<sup>28</sup> Harari believes cultural differences will vanish but thinks consciousness is worth saving. As an externalist, however, he denies humanity much free will and instead proposes salvation from an omnipotent, ill-defined technology through meditation.

One must look elsewhere for a history where human resilience and cultural variation survive. Decades ago, in *American Genesis* Thomas Hughes showed how one could escape from externalism in writing a general technological history.<sup>29</sup> More recently, Thomas Misa’s *From Leonardo to the Internet* provided a succinct non-determinist history from the Renaissance to the present, and Robert Friedel’s fine history of technology in Europe and North America during the last 1000 years included a nuanced discussion of ethical issues that deserved a wider popular audience.<sup>30</sup> What about works that begin with the emergence of humanity? Daniel R. Headrick’s *Technology: A World History* is too short at 200 pages to serve as a rebuttal to Harari. The longer *Science and Technology in World History* by James E. McClellan III and Harold Dorn is closer to what is needed, but the attention given to pure science, starting with ancient Greece, reduces the space available to a contextualist approach.<sup>31</sup> We await a world history of technology and culture that enables general readers to see the folly of conceiving history as an inevitable chain of events that leads to the elimination of cultural differences and the loss of consciousness.

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<sup>28</sup> Lovelock, *Novacene*, 130.

<sup>29</sup> Hughes, *American Genesis*.

<sup>30</sup> Misa, *Leonardo to the Internet*; Friedel, *A Culture of Improvement*.

<sup>31</sup> Headrick, *Technology: A World History*; McClellan and Dorn, *Science and Technology in World History*.

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