

BOOK

21 Lessons for the 21st Century:

AUTHOR

Yuval Noah Harari

PUBLISHER

Signal

PUBLICATION DATE

September 2018

SYNOPSIS [From the publisher]

"21 Lessons For the 21st Century provides a kind of instruction manual for the present day to help readers find their way around the 21st century, to understand it, and to focus on the really important questions of life. Once again, Harari presents this in the distinctive, informal, and entertaining style that already characterized his previous books. The topics Harari examines in this way include major challenges such as international terrorism, fake news, and migration, as well as turning to more personal, individual concerns, such as our time for leisure or how much pressure and stress we can take.

"In a world deluged by irrelevant information, clarity is power."

"As a historian, I cannot give people food or clothes – but I can try to offer some clarity, thereby helping to level the global playing field. If this empowers even a handful of additional people to join the debate about the future of our species, I have done my job."

"My focus is on current affairs and on the immediate future of human societies. What is happening right now? What are today's greatest challenges and most important choices? What should we pay attention to? What should we teach our kids?"

"What does the rise of Donald Trump signify? What can we do about the epidemic of fake news? Why is liberal democracy in crisis? Is God back? Is a new world war coming?"

"The merger of infotech and biotech might soon push billions of humans out of the job market and undermine both liberty and equality. Big Data algorithms might create digital dictatorships in which all power is concentrated in the hands of a tiny elite while most people suffer not from exploitation but from something far worse – irrelevance."

"This may sound overambitious, but Homo sapiens cannot wait. Philosophy, religion, and science are all running out of time. People have debated the meaning of life for thousands of years. We cannot continue this debate indefinitely."

"Before embarking on this intellectual journey, I would like to highlight one crucial point. In much of this book I discuss the shortcomings of the liberal worldview and the democratic system. I do so not because I believe liberal democracy is uniquely problematic but rather because I think it is the most successful and most versatile political model humans have so far developed for dealing with the challenges of the modern world."

“Humankind is losing faith in the liberal story that dominated global politics in recent decades, exactly when the merger of biotech and infotech confronts us with the biggest challenges humankind has ever encountered.”

“Humans think in stories rather than in facts, numbers, or equations, and the simpler the story, the better. Every person, group, and nation has its own tales and myths. But during the twentieth century the global elites in New York, London, Berlin, and Moscow formulated three grand stories that claimed to explain the whole past and to predict the future of the entire world: the fascist story, the communist story, and the liberal story.”

“The liberal story celebrates the value and power of liberty. It says that for thousands of years humankind lived under oppressive regimes that allowed people few political rights, economic opportunities, or personal liberties, and which heavily restricted the movements of individuals, ideas, and goods.”

“In the 1990s and 2000s this story became a global mantra. Many governments from Brazil to India adopted liberal recipes in an attempt to join the inexorable march of history. Those failing to do so seemed like fossils from a bygone era. In 1997 U.S. president Bill Clinton confidently rebuked the Chinese government, stating that its refusal to liberalize Chinese politics put it “on the wrong side of history.”

“In 1938 humans were offered three global stories to choose from, in 1968 just two, and in 1998 a single story seemed to prevail. In 2018 we are down to zero.”

“Already today, computers have made the financial system so complicated that few humans can understand it. As AI improves, we might soon reach a point when no human can make sense of finance anymore.”

“Humans were always far better at inventing tools than using them wisely.”

“In 2018 the common person feels increasingly irrelevant. Lots of mysterious words are bandied around excitedly in TED Talks, government think tanks, and high-tech conferences – globalization, blockchain, genetic engineering, artificial intelligence, machine learning – and common people may well suspect that none of these words are about them. The liberal story was the story of ordinary people. How can it remain relevant to a world of cyborgs and networked algorithms?”

“Perhaps in the twenty-first century populist revolts will be staged not against an economic elite that exploits people but against an economic elite that does not need them anymore. This may well be a losing battle. It is much harder to struggle against irrelevance than against exploitation.”

“In the end it was communism that collapsed. The supermarket proved to be far stronger than the gulag.”

“Democracy is based on Abraham Lincoln’s principle that “you can fool all the people some of the time, and some people all of the time, but you cannot fool all the people all the time.”

“This might imply that the present crisis of faith is less severe than its predecessors. Any liberal who is driven to despair by the events of the last few years can recollect how much worse things looked in 1918, 1938, or 1968. At the end of the day, humankind won’t abandon the liberal story, he might think, because it doesn’t have any alternative. People might give the system an angry kick in the stomach but, having nowhere else to go, they will eventually return to it.”

“People might completely give up on having a global story of any kind and instead seek shelter in local nationalist and religious tales.”

“This is arguably what is happening all over the globe, as the vacuum left by the breakdown of liberalism is tentatively filled by nostalgic fantasies about some local golden past.”

“But liberalism has no obvious answers to the biggest problems we face: ecological collapse and technological disruption.”

“All the talk about technology and ideology might sound very abstract and remote, but the very real prospect of mass unemployment – or personal unemployment – leaves nobody indifferent.”

“Some believe that within a mere decade or two, billions of people will become economically redundant. Others maintain that even in the long run automation will keep generating new jobs and greater prosperity for all.”

“So are we on the verge of a terrifying upheaval, or are such forecasts yet another example of ill-founded Luddite hysteria? It is hard to say.”

“Since the beginning of the Industrial Revolution, for every job lost to a machine at least one new job was created, and the average standard of living has increased dramatically. Yet there are good reasons to think that this time it is different and that machine learning will be a real game changer.”

“It is crucial to realize that the AI revolution is not just about computers getting faster and smarter. It is fueled by breakthroughs in the life sciences and the social sciences as well. The better we understand the biochemical mechanisms that underpin human emotions, desires, and choices, the better computers can become in analyzing human behavior, predicting human decisions, and replacing human drivers, bankers, and lawyers.”

“Two particularly important nonhuman abilities that AI possesses are connectivity and updatability.”

“Since humans are individuals, it is difficult to connect them to one another and to make sure that they are all up to date. In contrast, computers aren’t individuals, and it is easy to integrate them into a single flexible network.”

“In truth, however, an integrated computer system can maximize the advantages of connectivity without losing the benefits of individuality.”

“Similarly, self-driving vehicles could provide people with much better transportation services, and in particular reduce mortality from traffic accidents. Today close to 1.25 million people are killed annually in traffic accidents (twice the number killed by war, crime, and terrorism combined).⁶ More than 90 percent of these accidents are caused by very human errors: somebody drinking alcohol and driving, somebody texting a message while driving, somebody falling asleep at the wheel, somebody daydreaming instead of paying attention to the road.”

“Can you guess how long it took AlphaZero to learn chess from scratch, prepare for the match against Stockfish, and develop its genius instincts? Four hours. That’s not a typo. For centuries, chess was considered one of the crowning glories of human intelligence. AlphaZero went from utter ignorance to creative mastery in four hours, without the help of any human guide.”

“When I publish a book, my publishers ask me to write a short description that they use for publicity online. But they have a special expert who adapts what I write to the taste of the Google algorithm. The expert goes over my text and says, “Don’t use this word – use that word instead. Then we will get more attention from the Google algorithm.” We know that if we can just catch the eye of the algorithm, we can take the humans for granted.”

“The problem with such national and municipal schemes, however, is that the main victims of automation may not live in Finland, Ontario, Livorno, or Amsterdam. Globalization has made people in one country utterly dependent on markets in other countries, but automation might unravel large parts of this global trade network with disastrous consequences for the weakest links.”

“For example, what does basic education include: just reading and writing, or also composing computer code and playing the violin? Just six years of elementary school, or everything up to a PhD? And what about healthcare? If by 2050 medical advances make it possible to slow down the aging process and significantly extend human lifespans, will the new treatments be available to all ten billion humans on the planet, or just to a few billionaires? If biotechnology enables parents to upgrade their children, would this be considered a basic human need, or would we see humankind splitting into different biological castes, with rich superhumans enjoying abilities that far surpass those of poor *Homo sapiens*? Whichever way you choose to define “basic human needs,” once you provide them to everyone free of charge, they will be taken for granted, and then fierce social competitions and political struggles will focus on luxuries – be they fancy self-driving cars, access to virtual-reality parks, or enhanced bioengineered bodies. Yet if the unemployed masses command no economic assets, it is hard to see how they could ever hope to obtain such luxuries. Consequently, the gap between the rich (Tencent managers and Google shareholders) and the poor (those dependent on universal basic income) might become not merely bigger but actually unbridgeable.”

“*Homo sapiens* is just not built for satisfaction. Human happiness depends less on objective conditions and more on our own expectations. Expectations, however, tend to adapt to conditions, including the conditions of other people. When things improve, expectations balloon, and so even dramatic improvements in conditions might leave us as dissatisfied as before. If universal basic support is aimed at improving the objective conditions of the average person in 2050, it has a fair chance of succeeding. But if it is aimed at making people subjectively more satisfied with their lot and preventing social discontent, it is likely to fail.”

“Soon authority might shift again – from humans to algorithms. Just as divine authority was legitimized by religious mythologies, and human authority was justified by the liberal story, so the coming technological revolution might establish the authority of Big Data algorithms, while undermining the very idea of individual freedom.”

“Feelings are biochemical mechanisms that all mammals and birds use in order to quickly calculate probabilities of survival and reproduction. Feelings aren’t based on intuition, inspiration, or freedom – they are based on calculation.”

“As scientists gain a deeper understanding of the way humans make decisions, the temptation to rely on algorithms is likely to increase. Hacking human decision-making not only will make Big Data algorithms more reliable but also will simultaneously make human feelings less reliable.”

“The ability to navigate is like a muscle – use it or lose it.¹⁴ The same is true for the ability to choose spouses or professions.”

“As authority shifts from humans to algorithms, we may no longer view the world as the playground of autonomous individuals struggling to make the right choices.”

“Philosophers have been arguing about such “trolley problems” for millennia (they are so called because the textbook examples in modern philosophical debates refer to a runaway trolley car racing down a track, rather than to a self-driving car).¹⁷ Up till now, these arguments have had embarrassingly little

impact on actual behavior, because in times of crisis humans all too often forget about their philosophical views and follow their emotions and gut instincts instead.”

“After some time a priest and a Levite walk by, but both ignore the man. In contrast, a Samaritan — a member of a sect much despised by the Jews — stops when he sees the victim, takes care of him, and saves his life. The moral of the parable is that people’s merit should be judged by their actual behavior rather than by their religious affiliation and philosophical views.”

“Computer algorithms, however, have not been shaped by natural selection, and they have neither emotions nor gut instincts.”

“So far, modern ideologies, scientific experts, and national governments have failed to create a viable vision for the future of humanity. Can such a vision be drawn from the deep wells of human religious traditions? Maybe the answer has been waiting for us all along in the pages of the Bible, the Quran, or the Vedas. Secular people are likely to react to this idea with ridicule or apprehension. Holy scriptures may have been relevant in the Middle Ages, but how can they guide us in an era of artificial intelligence, bioengineering, global warming, and cyberwarfare? Yet secular people are a minority. Billions of humans still profess greater faith in the Quran and the Bible than in the theory of evolution; religious movements shape the politics of countries as diverse as India, Turkey, and the United States; and religious animosities fuel conflicts from Nigeria to the Philippines.”

“In premodern times religions were responsible for solving a wide range of technical problems in mundane areas such as agriculture. Divine calendars determined when to plant and when to harvest, while temple rituals secured rainfall and protected against pests. When an agricultural crisis loomed due to drought or a plague of locusts, farmers turned to the priests to intercede with the gods.”

“Traditional religions have lost so much turf because, frankly, they just weren’t very good at farming or healthcare. The true expertise of priests and gurus has never really been rainmaking, healing, prophecy, or magic. Rather, it has always been interpretation. A priest is not somebody who knows how to perform the rain dance and end the drought. A priest is somebody who knows how to justify why the rain dance failed, and why we must keep believing in our god even though he seems deaf to all our prayers.”

“Yet it is precisely their genius for interpretation that puts religious leaders at a disadvantage when they compete against scientists. Scientists too know how to cut corners and twist the evidence, but in the end, the mark of science is the willingness to admit failure and try a different tack. That’s why scientists gradually learn how to grow better crops and make better medicines, whereas priests and gurus learn only how to make better excuses.”

“The same is true of Christianity. A Christian may be a capitalist as easily as a socialist, and even though a few things Jesus said smack of downright communism, during the Cold War good American capitalists went on reading the Sermon on the Mount without taking much notice. There is just no such thing as “Christian economics,” “Muslim economics,” or “Hindu economics.”

“Of course, religious groups might harden their views on particular issues and turn them into allegedly sacred and eternal dogmas. In the 1970s theologians in Latin America came up with liberation theology, which made Jesus look a bit like Che Guevara. Similarly, Jesus can easily be recruited to the debate on global warming, with the result that current political positions look as if they are eternal religious principles.”

“This is already beginning to happen. Opposition to environmental regulations is incorporated into the fire-and-brimstone sermons of some American evangelical pastors, while Pope Francis is leading the charge against global warming, in the name of Christ (as witnessed in his second encyclical, “Laudato

si").² So perhaps by 2070, on the environmental question it will make all the difference in the world whether you are evangelical or Catholic. It goes without saying that evangelicals will object to any cap on carbon emissions, while Catholics will believe that Jesus preached that we must protect the environment."

"Aztecs firmly believed that without the sacrifices they performed each year, the sun would not rise and the entire universe would disintegrate. All these claims are false. They combine a willful ignorance of history with more than a hint of racism. None of the religions or nations of today existed when humans colonized the world, domesticated plants and animals, built the first cities, or invented writing and money. Morality, art, spirituality, and creativity are universal human abilities embedded in our DNA. Their genesis was in Stone Age Africa. It is therefore crass egotism to ascribe to them a more recent place and time, be it China in the age of the Yellow Emperor, Greece in the age of Plato, or Arabia in the age of Muhammad."

"It is certainly true that Judaism begat Christianity and influenced the birth of Islam – two of the most important religions in history. However, the credit for the global achievements of Christianity and Islam – as well as the guilt for their many crimes – belongs to the Christians and Muslims themselves rather than to the Jews. Just as it would be unfair to blame Judaism for the mass killings of the Crusades (Christianity is 100 percent culpable), there is also no reason to credit Judaism with the important Christian idea that all human beings are equal before God (an idea that stands in direct contradiction to Jewish orthodoxy, which even today holds that Jews are intrinsically superior to all other humans)."

"Israelis often use the term "the three great religions," thinking that these religions are Christianity (2.3 billion adherents), Islam (1.8 billion), and Judaism (15 million). Hinduism, with its 1 billion believers, and Buddhism, with its 500 million followers – not to mention the Shinto religion (50 million) and the Sikh religion (25 million) – don't make the cut.² This warped concept of "the three great religions" often implies in the mind of Israelis that all major religious and ethical traditions emerged out of the womb of Judaism, which was the first religion to preach universal ethical rules – as if humans prior to the days of Abraham and Moses lived in a Hobbesian state of nature without any moral commitments, and as if all of contemporary morality derives from the Ten Commandments. This is a baseless and insolent idea, which ignores many of the world's most important ethical traditions."

"To the best of our scientific knowledge, all of these sacred texts were written by imaginative Homo sapiens. They are just stories invented by our ancestors in order to legitimize social norms and political structures. I personally never cease to wonder about the mystery of existence. But I have never understood what it has to do with the niggling laws of Judaism, Christianity, or Hinduism. These laws were certainly very helpful in establishing and maintaining the social order for thousands of years. But in that, they are not fundamentally different from the laws of secular states and institutions."

"Yet though gods can inspire us to act compassionately, religious faith is not a necessary condition for moral behavior. The idea that we need a supernatural being to make us act morally assumes that there is something unnatural about morality. But why? Morality of some kind is natural. All social mammals from chimpanzees to rats have ethical codes that limit behavior like theft and murder. Among humans, morality is present in all societies, even though not all of them believe in the same god, or in any god. Christians act with charity even without believing in the Hindu pantheon, Muslims value honesty despite rejecting the divinity of Christ, and secular countries such as Denmark and the Czech Republic aren't more violent than devout countries such as Iran and Pakistan."

"For some people, a strong belief in a compassionate god that commands us to turn the other cheek may help in curbing anger. That's been an enormous contribution of religious belief to the peace and harmony of the world. Unfortunately, for other people religious belief actually stokes and justifies their anger, especially if someone dares to insult their god or ignores His wishes. So the value of the lawgiver god ultimately depends on the behavior of His devotees."

“What kind of an answer do people expect? In almost all cases, when people ask about the meaning of life, they expect to be told a story. Homo sapiens is a storytelling animal that thinks in stories rather than in numbers or graphs, and believes that the universe itself works like a story, replete with heroes and villains, conflicts and resolutions, climaxes and happy endings. When we look for the meaning of life, we want a story that will explain what reality is all about and what my particular role is in the cosmic drama. This role makes me a part of something bigger than myself, and gives meaning to all my experiences and choices.”

“If I believe in some version of the Circle of Life story, it means that I have a fixed and true identity that determines my duties in life. For many years I may be doubtful or ignorant of this identity, but one day, in some great climactic moment, it will be revealed, and I will understand my role in the cosmic drama. Though I may subsequently encounter many trials and tribulations, I will be free of doubts and despair.”

“All stories are incomplete. Yet in order to construct a viable identity for myself and give meaning to my life, I don’t really need a complete story devoid of blind spots and internal contradictions. To give meaning to my life, a story needs to satisfy just two conditions. First, it must give me some role to play. A New Guinean tribesman is unlikely to believe in Zionism or in Serbian nationalism, because these stories don’t care at all about New Guinea and its people. Like movie stars, humans like only those scripts that reserve an important role for them.”

“Second, whereas a good story need not extend to infinity, it must extend beyond my horizons. The story must provide me with an identity and give meaning to my life by embedding me within something bigger than myself. But there is always a danger that I might start wondering what gives meaning to that “something bigger.” If the meaning of my life is to help the proletariat or the Polish nation, what exactly gives meaning to the proletariat or to the Polish nation? There is a story of a man who claimed that the world was kept in place by resting on the back of a huge elephant. When asked what the elephant stood on, he replied that it stood on the back of a large turtle. And the turtle? On the back of an even bigger turtle. And that bigger turtle? The man snapped, “Don’t worry about it. From there it’s turtles all the way down.”

“Most successful stories remain open-ended. They never need to explain where meaning ultimately comes from, because they are so good at capturing people’s attention and keeping it inside a safe zone. For instance when explaining that the world rests on the back of a huge elephant, you should preempt any difficult questions by describing in great detail the way that the flapping of the elephant’s gigantic ears causes hurricanes, and how when the elephant quivers with anger earthquakes shake the surface of the earth. If you weave a good enough yarn, it won’t occur to anyone to ask what the elephant is standing on. Similarly, nationalism enchants us with tales of heroism, moves us to tears by recounting past disasters, and ignites our fury by dwelling on the injustices our nation suffered. We get so absorbed in this national epic that we start evaluating everything that happens in the world by its impact on our nation, and hardly think of asking what makes our nation so important in the first place.”

“When you believe a particular story, it makes you extremely interested in its minutest details, while keeping you blind to anything that falls outside its scope. Devout communists may spend countless hours debating whether it is permissible to make an alliance with social democrats in the early stages of revolution, but they seldom stop to ponder the place of the proletariat in the evolution of mammalian life on planet Earth or in the spread of organic life in the cosmos. Such idle talk is considered a counterrevolutionary waste of breath.”

“This theory of life as a never-ending epic is extremely attractive and common, but it suffers from two main problems. First, by lengthening my personal story I don’t really make it more meaningful. I just make it longer. Indeed, the two great religions that embrace the idea of a never-ending cycle of births and

deaths, Hinduism and Buddhism, share a horror of the futility of it all. Millions upon millions of times I learn how to walk, I grow up, I fight with my mother-in-law, I get sick, I die – and then I do it all over again. What’s the point? If I could accumulate all the tears I have shed in all my previous lives, they would fill the Pacific Ocean; if I gathered together all the teeth and hair I have lost, they would make a mound higher than the Himalayas. And what do I have to show for all that? No wonder that Hindu and Buddhist sages have focused much of their efforts on finding a way to get off this merry-go-round rather than to perpetuate it.”

“The second problem with this theory is the paucity of supporting evidence. What proof do I have that in a past life I was a medieval peasant, a Neanderthal hunter, a Tyrannosaurus rex, or an amoeba? (If I really lived millions of lives, I must have been a dinosaur and an amoeba at some point, for humans have existed for only the last 2.5 million years.) And in the future, will I be reborn as a cyborg, an intergalactic explorer, or even a frog? Basing my life on this promise is a bit like selling my house in exchange for a postdated check drawn on a bank above the clouds.”

“Most stories are held together by the weight of their roof rather than by the strength of their foundations. Consider the Christian story. It has the flimsiest of foundations. What evidence do we have that the son of the Creator of the entire universe was born as a carbon-based life-form somewhere in the Milky Way about two thousand years ago? What evidence do we have that it happened in the Galilee area, and that His mother was a virgin? Yet enormous global institutions have been built on top of that story, and their weight presses down with such overwhelming force that they keep the story in place. Entire wars have been waged over changing a single word of the story. The thousand-year schism between Western Christians and Eastern Orthodox Christians, which has manifested itself recently in the mutual butchery of Croats by Serbs and Serbs by Croats, began over the lone word *filioque* (“and from the son” in Latin). The Western Christians wanted to insert this word into the Christian profession of faith, while the Eastern Christians vehemently objected. (The theological implications of adding that word are so arcane that it would be impossible to explain them here in any meaningful way. If you are curious, ask Google.) Once personal identities and entire social systems are built on top of a story, it becomes unthinkable to doubt it, not because of the evidence supporting it, but because its collapse will trigger a personal and social cataclysm. In history, the roof is sometimes more important than the foundations.”

“Liberalism took a radical step in denying all cosmic dramas, but then it recreated the drama within the human being: the universe has no plot, so it is up to us humans to create a plot, and this is our vocation and the meaning of our life. Thousands of years before our liberal age, ancient Buddhism went further by denying not just all cosmic dramas but even the inner drama of human creation. The universe has no meaning, it claimed, and human feelings too carry no meaning. They are just ephemeral vibrations, appearing and disappearing for no particular purpose. That’s the truth. Get over it.”

“So if you want to know the truth about the universe, about the meaning of life, and about your own identity, the best place to start is by observing suffering and exploring what it is. The answer isn’t a story.”