[Homo Deus: A Brief History of Tomorrow by Youval Noah Harari](#)

The New Human Agenda

The same three problems preoccupied the people of twentieth-century China, of medieval India and of ancient Egypt. Famine, plague and war were always at the top of the list. [...] For the first time in history, more people die today from eating too much than from eating too little; more people die from old age than from infectious diseases; and more people commit suicide than are killed by soldiers, terrorists and criminals combined.

There are no longer natural famines in the world; there are only political famines. If people in Syria, Sudan or Somalia starve to death, it is because some politician wants them to.

Half of humankind is expected to be overweight by 2030.

Today the main source of wealth is knowledge. And whereas you can conquer oil fields through war, you cannot acquire knowledge that way.

Terrorism is a strategy of weakness adopted by those who lack access to real power.

Humanity's next targets are likely to be immortality, happiness and divinity.

Just try to imagine Christianity, Islam or Hinduism in a world without death -- which is also a world without heaven, hell or or reincarnation.

Humans always die due to some technical glitch. And every technical problem has a technical solution.

If you think that religious fanatics with burning eyes and flowing beards are ruthless, just wait and see what elderly retail moguls and ageing Hollywood starlets will do when they think the elixir of life is within reach.

Happiness depends on expectations rather than objective conditions. [...] Happiness and suffering are nothing but different balances of bodily sensations. [...] The only thing that makes people miserable is unpleasant sensations in their own bodies. [...] People are made happy by one thing and one thing only -- pleasant sensations in their bodies.

According to the Buddha, we can train our minds to observe carefully how all sensations constantly arise and pass. When the mind learns to see our sensations for what they are -- ephemeral and meaningless vibrations -- we lose interest in pursuing them. For what is the point of running after something that disappears as fast as it arises?

Bioengineering is not going to wait patiently for natural selection to work its magic.

In pursuit of health, happiness and power, humans will gradually change first one of their features and then another, and another, until they will no longer be human.

Since no one understands the system any more, no one can stop it. If we somehow succeed in hitting the brakes, our economy will collapse, along with our society.

No clear line separates healing from upgrading.

Knowledge that does not change behavior is useless. But knowledge that changes behaviour quickly loses its relevance. The more data we have and the better we understand history, the faster history alters its course, and the faster our knowledge becomes outdated.

Grass is nowadays the most widespread crop in the USA after maize and wheat.

Computers powerful enough to understand and overcome the mechanisms of ageing and death will probably also be powerful enough to replace humans in any and all tasks.

Part 1 - Home sapiens Conquers the World

The mind is a flow of subjective experiences, such as pain, pleasure, anger and love. These mental experiences are made of interlinked sensations, emotions and thoughts, which flash for a brief moment, and immediately disappear. Then other experiences flicker and vanish, arising for an instant and passing away. (When reflecting on it, we often try to sort the experiences into distinct categories such as sensations, emotions and thoughts, but in actuality they are all mingled together.) This frenzied collection of experiences constitutes the stream of consciousness.

Every subjective experience has two fundamental characteristics: sensation and desire.

Sensations and emotions are biochemical data-processing algorithms.

The better we understand the brain, the more redundant the mind seems. [...] Indeed, 99 percent of bodily activities, including muscle movement and hormonal secretions, take place without any need of conscious feelings.

Part 2 - Homo Sapiens Give Meaning to the World

Human networks built in the name of imaginary entities such as gods, nations and corporations normally judge their success from the viewpoint of the imaginary entity. A religion is successful if it follows divine commandments to the letter; a nation is glorious if it promotes the national interest; and a corporation thrives if it makes a lot of money.

How do you know if an entity is real? Very simple -- just ask yourself, 'Can it suffer?'

Corporations, money and nations exist only in our imaginations.

We always believe in 'the truth'; only other people believe in superstitions.

[Definition] Religion is any all-encompassing story that confers superhuman legitimacy on human laws, norms and values. [...] Religion asserts that we humans are subject to a system of moral laws that we did not invent and that we cannot changes.

Liberals, communists and followers of other modern creeds dislike describing their own system as a 'religion', because they identify religion with superstitions and supernatural powers. If you tell communists or liberals that they are religious, they think you're accusing them of blindly believing in groundless pipe dreams. In fact, it means only that they believe in some system of moral laws that wasn't invented by humans, but humans must nevertheless obey.

The communist laws of history are similar to the commandments of the Christian God, inasmuch as they are superhuman forces that humans cannot change at will. According to Marx, we cannot change the laws of history.

Religion is a tool for preserving social order and for organising large-scale cooperation. [...] Without the guiding hand of some religion, it is impossible to maintain large-scale social orders.

Religion is a deal, whereas spirituality is a journey. [...] If you obey God, you'll be admitted to heaven. If you disobey Him, you'll burn in hell. [...] Spiritual journeys take people in mysterious ways towards unknown destinations (Who am I?). [...] For religions, spirituality is a dangerous threat.

Religion is interested above all in order. Science is interested above all in power (e.g. to cure diseases, fight wars and produce food.)

Modernity is a surprisingly simple deal. Humans agree to give up meaning in exchange for power.

Is economic growth more important than family bonds? By presuming to make such ethical judgements, free-market capitalism has crossed the border from the land of science into that of religion.

There are three kinds of resources: raw materials, energy and knowledge.

The greatest scientific discovery was the discovery of ignorance. Once humans realised how little they knew about the world, they suddenly had a very good reason to seek new knowledge, which opened up the scientific road to progress.

The great political, artistic and religious project of modernity has been to find a meaning to life that is not rooted in some great cosmic plan.

The humanist religion worships humanity. [...] According to humanism, humans must draw from within their inner experiences not only the meaning of their own lives, but also the meaning of the entire universe. [...] The central religious revolution of modernity was not losing faith in God; rather, it was gaining faith in humanity.

An experience is a subjective phenomenon made up of three main ingredients: sensations, emotions and thoughts. At any particular moment my experience comprises everything I sense (heat, pleasure, tension, etc), every emotion I feel (love, fear, anger, etc.) and whatever thoughts arise in my mind.

Humanism split into three main branches. *The orthodox branch holds that each human being is a unique individual possessing a distinctive inner voice and a never-to-be-repeated series of experiences.*

During the nineteenth and twentieth centuries, as humanism gained increasing social credibility and political power, it sprouted two very different offshoots: *socialist humanism* which encompassed a plethora of socialist and communist movements, and *evolutionary humanism*, whose most famous advocates were the Nazis.

People feel bound by democratic elections only when they share a basic bond with most other voters. [...] Democratic elections usually work only within populations that have some prior common bond such as a shared religious beliefs or national myths. They are a method to settle disagreements among people who already agree on the basics.

Religion

The ideological vacuum makes China the most promising breeding ground for the new techno-religions emerging from Silicon Valley.

More than a century after Nietzsche pronounced Him dead, God seems to be making a comeback. But that is a mirage. God *is* dead -- it's just taking a while to get rid of the body.

New technologies kill old gods and give birth to new gods. The revolutionary technologies of the twenty-first century are far more likely to spawn unprecedented religious movements than to revive medieval creeds.

Islamic fundamentalists may repeat the mantra that 'Islam is the answer', but religions that lose touch with the technological realities of the day forfeit their ability even to understand the questions being asked. [...] Hundreds of millions may nevertheless go on believing in Islam, Christianity or Hinduism. But numbers alone don't count for much in history. History is often shaped by small groups of forward-looking innovators rather than by backward-looking masses.

In the early twenty-first century the train of progress is again pulling out of the station -- and this will probably be the last train to ever leave the station called *Homo sapiens.* Those who miss this train will never get a second chance. In order to get a seat on it you need to understand twenty-first-century technology, and in particular the powers of biotechnology and computer algorithms. [...] If Marx came back to life today, he would probably urge his few remaining disciples to devote less time to reading Das Kapital and more time to studying the Internet and the human genome.

Ask yourself: what was the most influential discovery, invention or creation of the twentieth century? That's a difficult question, because it is hard to choose from a long list of candidates, including scientific discoveries such as antibiotics, technological inventions such as computers, and ideological creations such as feminism. Now ask yourself: what was the most influential discovery, invention or creation of traditional religions such as Islam and Christianity in the twentieth century? This too is a very difficult question, because there is so little to choose from. What did priests, rabbis and muftis discover in the twentieth century that can be mentioned in the same breath as antibiotics, computers or feminism? Having mulled over these two questions, from where do you think the big changes of the twenty-first century will emerge: from the Islamic State, or Google?

The Bible is kept as a source of authority, even though it is no longer a true source of inspiration.

When genetic engineering and artificial intelligence reveal their full potential, liberalism, democracy and free markets might become as obsolete as flint knives, tape cassettes, Islam and communism.

Part 3 - Homo Sapiens Loses Control

Free will exists only in the imaginary stories we humans have invented. [...] (The question is not whether humans) can act upon their inner desires -- the question is whether they can *choose their desires in the first place.*

I feel a particular wish welling up within me because this is the feeling created by the biochemical processes in my brain. [...] I don't *choose* my desires. I only *feel* them, and act accordingly.

Once we accept that there is no soul and that humans have no inner essence called 'the self', it no longer makes sense to ask, 'How does the self choose its desires?' [...] There is only a stream of consciousness, and desires arise and pass away within this stream, but there is no permanent self that owns the desires.

If I am indeed the master of my thoughts and decisions, can I decide not to think about anything at all for the next sixty seconds?

(There are) at least two different selves within us: the *experiencing self* and the *narrating self.* The experiencing self is our moment-to-moment consciousness. The narrating self is forever busy spinning yarns about the past and making plans for the future. [...] It doesn't narrate everything, and usually weaves the story using only peak moments and end results. [...] Most of us identify with our narrating self. When we say 'I', we mean the story in our head not the onrushing stream of experiences we undergo. [...] We always retain the feeling that we have a single unchanging identity from birth to death (and perhaps even beyond).

If you want to make people believe in imaginary entities such as gods and nations, you should make them sacrifice something valuable.

Each of us has a sophisticated system that throws away most of our experiences, keeps only a few choice samples, mixes them up with bits from movies we've seen, novels we've read, speeches we've heard, and daydreams we've savoured, and out of all that jumble it weaves a seemingly coherent story about who I am, where I came from and where I am going. This story tells me what to love, whom to hate and what to do with myself. This story may even cause me to sacrifice my life, if that's what the plot requires. [...] But in the end, they are all just stories.

Every moment the biochemical mechanisms of the brain create a flash of experience, which immediately disappears. Then more flashes appear and fade, appear and fade, in quick succession. These momentary experiences do not add up to any enduring essence.

Human soldiers murder, rape and pillage, and even when they try to behave themselves, they all too often kill civilians by mistake. Computers programmed with ethical algorithms could far more easily conform to the latest rulings of the international criminal court.

The most important question in the twenty-first century economics may very well be what to do with all the superfluous people. What will conscious humans do, once we have highly intelligent non-conscious algorithms that can do almost everything better?

The Facebook algorithm is a better judge of human personalities and dispositions than even people's friends, parents and spouses. (A) study was conducted on 86,220 volunteers who have a Facebook account and who completed a hundred-item personality questionnaire. The Facebook algorithm predicted the volunteers' answers based on monitoring their Facebook Likes - which webpages, images and clips they tagged with the Like button. The more Likes, the more accurate the predictions. The algorithm's predictions were compared with those of work colleagues, friends, family members and spouses. Amazingly, the algorithm needed a set of only ten Likes in order to outperform the predictions of work colleagues. It needed seventy Likes to outperform friends, 150 Likes to outperform family members and 300 Likes to outperform spouses. In other words, if you happen to have clicked 300 Likes on your Facebook account, the Facebook algorithm can predict your opinions and desires better than your husband or wife!

New Religions

The new religions are unlikely to emerge from the caves of Afghanistan or from the madrasas of the Middle East. Rather, they will emerge from research laboratories. [...] Despite all the talk of radical Islam and Christian fundamentalism, the most interesting place in the world from a religious perspective is not the Islamic State or the Bible Belt, but Silicon Valley. That's where hi-tech gurus are brewing for us brave new religions that have little to do with God, and everything to do with technology.

These new techno-religions can be divided into two main types: ***techno-humanism*** and ***data religion***. Data religion argues that humans have completed their cosmic task and should not pass the torch on to entirely new kinds of entities. Techno-humanism still sees humans as the apex of creation and clings to many traditional humanist values [...] but concludes we should use technology to create *Homo deus* -- a much superior model. Homo deus will retain some essential human features, but will also enjoy upgraded physical and mental abilities that will enable it to hold its own

even against the most sophisticated non-conscious algorithms. (With the help of genetic engineering, nanotechnology and brain-computer interfaces.

The Data Religion

What might replace desires and experiences as the source of all meaning and authority? Information. The most interesting emerging religion is Dataism.

Data (has been) seen as only the first step in a long chain of intellectual activity. Humans were supposed to distil data into information, information into knowledge, and knowledge into wisdom. However, Dataists believe that humans can no longer cope with the immense flows of data.

Dataism is most firmly entrenched in its two mother disciplines: *computer science* and *biology.*

As data-processing conditions change again in the twenty-first century, democracy might decline and even disappear. As both volume and speed of data increase, venerable institutions like elections, political parties and parliaments might become obsolete -- not because they are unethical, but because the can't process data efficiently enough.

In the early twenty-first century politics is bereft of grand visions. Government has become mere administration. It manages the country, but no longer leads it. Government ensures that teachers are paid on time and sewage systems don't overflow, but it has no idea where the country will be in twenty years.

We often imagine that democracy and the free market won because they were 'good'. In truth, they won because they improved the global data-processing system.

Dataism is the first movement since 1789 that created a genuinely novel value: *freedom of information.*