SUMMARY

THE EVOLUTION OF EVERYTHING

MATT RIDLEY

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Summary of "The Evolution of Everything" by Matt Ridley

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How New Ideas Emerge

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Introduction

When you hear the word *evolution,* you likely think of the theory of evolution and picture monkeys turning into a man. But evolution means "unfolding," and evolution is a story, a narrative of how things change, which can apply to more than just biology. In fact, evolution is happening all around us and can explain the way that all human culture changes: from morality to technology, from money to religion. This change is gradual, incremental, undirected, and driven by natural selection among competing ideas. However, when we learn about human history, we place too much emphasis on design, direction, and planning, and focus too little on evolution. We believe that generals win battles, politicians run countries, teachers shape minds, priests teach morality, and more. We don't look at the world as a self-organizing, self-changing place. For example, when it comes to markets, languages, cultural customs, those are certainly all man-made things. But none of them were designed by a human being. They all emerged unplanned. That's because there is an evolution of everything that applies to society, money, technology, language, law, culture, music, history, god, politics, and more. The general theory says that things don't stay the same; instead, there is a gradual change that human beings mistakenly take credit for. The truth is that the complexity of society cannot be credited to any particular being other than the gradual evolution of the world. So if you're ready to learn about the evolution of everything, then let's begin.

Our World Evolves From the Bottom-Up

A frustrated pilot in the First World War once stated, "This machine is not fitted with skyhooks," when instructed to stay in the same place in the sky for the next hour. It was philosopher Daniel Dennett who then used the skyhook as a metaphor to explain that life evolves due to the intelligent designers who move our world forward. The history of Western thought is then dominated by skyhooks, that is, we believe that the outcome of our world has emerged from our clever plans and designs.

Take a look at Plato, who believed that society worked by imitating a designed cosmic order, or Homer who said gods decided the outcome of battles. St. Paul then said that you should behave morally because that is what Jesus instructs. Mohamed said you should obey God's word as transmitted through the Koran. And Luther said your fate is in God's hands. Kant believed morality transcended human experience and Nietzche said that strong leaders made for good societies. Marx then said that a planned state came from economic and social progress. Again and again, we have been told that our world is designed and organized from the top-down.

However, there is another stream of thought that tried but failed to break through. For example, there was a Greek philosopher by the name of Epicurus who claimed that the physical world, the living world, human society, and morality all emerged spontaneously. These phenomena required no divine intervention, no benign monarchy to explain them. Instead, everything is made of invisibly small and indestructible atoms. The atoms obey the laws of nature and every phenomenon is the result of natural causes. Unfortunately, Epicurus's writings didn't survive. But 300 years later, his ideas were revived by the Roman poet Titus Lucretius Carus, whose poems rejected all magic, mysticism, superstition, religion, and myth.

Harvard historian Stephen Greenblatt believed that Lucretius anticipated modern physics by arguing that everything is made up of invisible particles. He also believed that the universe had no creator and no purpose; instead, the world was just a product of creation and destruction, governed entirely by chance. It was these ideas by Epicurus and Lucretius that led to Darwin's theory of evolution; in fact, if Christians had not suppressed the ideas of Lucretius, we would have discovered Darwinism centuries before we did.

Darwin's Theory of Evolution Became the Best Argument Against Creationism

In 1803, theologian William Paley argued that our biology was based upon purpose. For example, he based his argument off imagining that as he was walking along a heath, he stubbed his toe against a rock. Then he imagined his reaction if he stubbed his toe on a watch instead of a rock. Picking up the watch, he would conclude that it was man-made. Someone had to have made it at some point. So if a watch implies a watchmaker, then couldn't we imply that someone made the rock? Or an animal? He states, "every manifestation of design which existed in the watch, exists in the works of nature." That design, however, exceeds our understanding and knowledge; therefore, God must be that designer.

It was these ideas that led to thinkers like David Hume who asked, "Who designed the designer?" As a result, Hume was happy to poke holes in the arguments of natural theology and believed there was a greater explanation other than divine intelligence. It was nearly six decades after Paley's book that Charles Darwin finally provided that explanation. After traveling the world and collecting facts of stone and flesh, he meticulously observed his findings and put together an astonishing theory: that the development of complex organisms came from simple cells, this process became known as natural selection, meaning beings with certain characteristics evolved to become better suited to their environment and increase their chance of survival.

Darwin's theory of evolution became the strongest argument against creationism. There was still one problem, however. As we begin to learn about DNA and its complexities, it's hard to imagine it all coming into being from scratch. Furthermore, now that we have been able to understand and decode genes, we often ask the purpose of individual genes. Whenever somebody asks what a certain gene is for, they automatically assume the question relates to the needs of the body; however, oftentimes the answer to that question is *the gene itself*. It was Richard Dawkins who became

famous for the ideas presented in his book *The Selfish Gene,* which argues that our bodies are simply robot vehicles blindly programmed to preserve the selfish molecules known as genes.

Essentially, the only way to understand organisms is to see them as mortal and temporary vehicles used to secure their continued survival. For example, a male deer might risk his life in a battle with another stag, or a female deer might exhaust her reserves of calcium producing milk for her young, not to help its own body's survival but to pass the genes to the next generation. Similarly, a bee suicidally stings an animal that threatens the hive so that its genes may survive. It makes more sense to see the body as serving the needs of the genes than vice versa. In other words, it makes more sense to view it from the bottom-up.

Biology, Cities, and Language all Emerge in the Same Way

Take a look at the development of the embryo in the body, which is perhaps the most beautiful demonstration of spontaneous order. Richard Dawkins in his book *The Greatest Show on Earth* wrote, "the key point is that there is no choreographer and no leader. Order, organization, structure - these all emerge as by-products of rules which are obeyed locally and many times over." In other words, there is no plan, just cells reacting to local effects. It is almost as if an entire city emerged from chaos just because people responded to local incentives in the way they set up their homes and businesses.

Take the termite mound in the Australian outback, for example. It is tall, ventilated, and a perfect system for housing a colony of tiny insects in comfort and warmth. The termite mound is carefully engineered, similar to that of a cathedral. Yet there is no engineer. Each grain of sand or mud used to construct the mound is carried to its place by a termite who acts under no instruction and with no plan in mind. The insect is simply reacting to local signals. It is almost as if a human language, with all its syntax and grammar, could also emerge spontaneously from all the actions of individual speakers with no rules set in place. In fact, that is exactly how languages emerged. Language emerged in the same fashion as DNA - through evolution.

Both language and DNA consist of linear digital codes, and both evolved by selective survival of sequences generated by partly random variations. For instance, languages mutate, diversify, and evolve and the result becomes a structured set of rules, grammar, and syntax that is as rigid and formal as you could want. As DNA evolves through natural selection, language does as well. For example, frequently used words tend to be short, and words get shorter if they are more frequently used. We abbreviate terms if we speak them often. This is good because it means we waste less breath, time, and paper. Words that don't get used, however, simply die out.

This kind of evolution also applies to our economy and technology. It was in the late eighteenth century that Adam Smith published his book *The Wealth of Nations*. In it, he argued for a different evolutionary idea in which prosperity is produced by the free exchange of goods and services. He argued that becoming more prosperous is the same as becoming more productive. For example, a farmer who supplies food to the ironmonger in exchange for tools becomes more productive. It is this spontaneous and voluntary exchange of goods and services that leads to a division of labor. And in its ideal form, the free market creates a network of collaboration among people to raise each other's standard of living, leading to more production and innovation.

This innovation is what leads to the "survival of the fittest" in the economy. Those goods and services that meet the needs of humans are the ones that ultimately survive. We see this too in technology. Similar to biological evolution, technology moves to new innovations through trial and error. This process of trial and error is what led to the Industrial Revolution and the technology of today. But the Industrial Revolution took the world by surprise, it emerged from thousands of individual fragments of partial knowledge; there was no plan, and so innovation can never be predicted. Innovation is solely the result of people being free to exchange. It was economist Larry Summers who stated, "Things will happen in well-organized efforts without direction, controls, plans. That's the consensus among economists."

The Evolution of Morality and Religion

When it comes to morality, people often subscribe to the idea that morality is handed down from God. It is God who teaches us right from wrong and sets the guidelines for how we should behave based on a moral code. For Christians, it is the Ten Commandments. But what if God wasn't necessary for morality? According to Adam Smith, morality is simply a spontaneous phenomenon, in the sense that people decide their own moral codes by observing others and society; meanwhile, moralists record these conventions and teach them back to people as top-down instructions.

Similar to the evolution of technology, morality also evolves through trial and error. You see, Smith observed that morality wasn't necessarily taught, it evolved. When children are learning the ways of the world, they go through trial and error as they discover which actions provoke positive responses from others. Through this process, a common moral code evolved. For example, a child who develops a sense of morality in a violent medieval society in Prussia by trial and error would end up with a moral code quite different from a child growing up in a peaceful German suburb today. The medieval child would be judged moral if he killed others to defend his city, he would be seen as honorable. Today, however, someone would be thought of as moral if he refused to eat meat and gave generously to charity.

So if morality isn't a set of rules prescribed by God, then what does this mean for religion? Well, just like morality, religion is a product of evolution. When you look at the ceiling of the Sistine Chapel, you witness Adam and God touch fingers. But it's not necessarily clear who is creating whom. Of course, most assume God is the one doing the creating, and much of the world believes this. But what if *man created God?* What if God is an invention of the human imagination? The belief that an omnipotent deity controls life, death and every detail in nature is as top-down as it gets. But God has an evolutionary history too.

For example, in first-century Rome, every city had groups of religions competing against each other. Temples of the gods of Jupiter, Baal, and others lay beside one another. It was only a matter of time before these gods became consolidated. Imagine thousands of independently owned cafes being replaced by 2-3 chains like Starbucks with superior products. It's also a well-known fact that the ancient Romans and Greeks were big believers in polytheism, believing in many gods; meanwhile, Christians believed in the existence of only one God. Over time, we also saw a shift from gods with human-like traits, like jealousy, to more virtuous and holy traits, like the Allah and Christian God we see today.

The Evolution of Personality Shows That Our Personalities are Innate and Not Influenced by Culture

Many believe that personality is shaped by our upbringing. That our parents shape our personalities and that differences between children were caused by parents. In the 1990s, psychologist Judith Rich Harris recounted experiments that all demonstrated how children resembled their parents. For example, one study reviewed emotional expressiveness in children and found that freely expressive parents had freely expressive children. Similarly, "buttoned-up" parents had "button-up" children. However, these studies didn't take into account genetic alternatives. Perhaps these children and parents both had similar innate tendencies.

By the 1960s, people blamed parents and early influence on almost every affliction. Homosexuality was blamed on hostile fathers, autism on cold mothers, dyslexia on bad teachers, and more. At the time, books were published with titles like *Not in Our Genes,* insinuating that DNA was completely irrelevant. Soon, however, scientists could no longer ignore the overwhelming evidence to prove that genes *do* matter.

For example, students studying animal behavior were witnessing a cuckoo chick that never met its parents still know how to eject its host's eggs from the nest, migrate to Africa, return, sing, select a victim species, and do it all over again. There was something innate within these birds; therefore, zoologists were wondering why some animals were endowed with natural instincts while human beings relied on cultural influence to fill their empty minds. Geneticists then began to notice that twins raised separately often had similar intelligence and personality, while adopted children raised together were often very different.

In the 1990s, it finally became clear that homosexuality was much more innate and irreversible than people had assumed. All this means that our

genes certainly play a larger role than we realize. For instance, the origin of sex differences in human behavior is still often misunderstood. Our culture relentlessly reinforces gender stereotypes like little boys must play with trucks while girls prefer to play with dolls. Toy shops are even divided into pink girls' and blue boys' aisles. This angers those who believe that the behavioral differences between boys and girls are culturally forced upon children. But experiment after experiment shows that given a choice, girls will play with dolls and boys with trucks, no matter their previous experience.

In the early 2000s, behavioral scientist Melissa Hines proved the same preference is true of male and female monkeys. Given the choice, female monkeys will play with dolls, males with trucks. Monkeys are unaware of cultural influence, proving that personality must evolve from within! Not only do people believe our personalities are a reflection of culture, but many believe our intelligence and education are governed by outside influences too. After all, intelligent people must have had great teachers, right? Well, one educational system dismantles this belief.

Montessori schools rely on collaboration, they are test-free with mixed-age classrooms, and they emphasize self-directed learning. Remarkably, these schools have an incredible track record in producing entrepreneurs. In fact, the founders of Amazon, Wikipedia, and Google (both of them) went to Montessori schools. So perhaps the secret to education lies in bringing out a child's natural tendency to go against the rules and fostering their curiosity. In other words, Montessori schools demonstrate that learning happens when using a bottom-up educational approach.

The Evolution of the Internet is Following the Same Fated Pattern as Money

Just like everything else, money is an evolutionary phenomenon. Money gradually emerged among traders and was not created by rulers. In the eighteenth century, more people began moving to towns and working for wages rather than staying in rural villages and being paid in trades. Employers were then faced with a new problem: a shortage of coins. Meanwhile, the Royal Mint refused to mint more for most of the eighteenth century. So Thomas Williams, a businessman in Wales, decided to take matters into his own hands.

In 1787, he began producing copper coins from his mine. He didn't pretend that they were pennies, but "tokens" that could be exchanged for pennies, a legal trade. He called these tokens "druids" and they were beautifully designed and nearly impossible to counterfeit. Eventually, factory owners began to pay their workers in druids, and local shopkeepers started accepting them instead of pennies. Druids became an entirely private currency. Money wasn't controlled by the rulers and wasn't a government monopoly. People were free to develop money, similar to the way the internet works today.

In the nineteenth century, Sweden had a free banking system, in which banks competed to issue their own paper currencies. "During the 70 years of its existence, not a single bill-issuing bank failed, no bill-owner lost a Krona, and no bank had to shut its windows for even a single day." Canada adopted a similar approach in the 1930s, which allowed its economy to survive the Great Depression. It was during the Civil War in the United States when the federal government tried to raise funds by allowing federally chartered banks; however, with few takers, the government began to hit state banks with a 10% tax, killing the role of state-run banks.

Today, we now have an evolution of mobile money. New forms of self-organizing money are continually being born: air miles, mobile-phones,

credits, and bitcoins. All of this can be credited to the internet, which is also an evolutionary phenomenon. The internet has no center and no hierarchy, nobody planned it. Nobody foresaw blogs, social networks, or even search engines. Nobody is in charge, and despite the messiness, it is not chaotic. It is ordered, complex, and patterned. The true origin of the internet doesn't lie in brilliant individuals, private companies, or government funding; instead, it lies in open-source, peer-to-peer networking among groups of scientists, programmers, and hobbyists.

Unfortunately, our internet is in danger of succumbing to the same fate as our money and banks. Just like our banks became centralized and controlled, the government wishes to do the same with the internet and regulate what we do on the internet and be free to invade our privacy. For instance, in Britain, Snowden revealed that over one million webcam users were spied upon in a fishing expedition by the government spying agency, GCHQ. If we want the internet to continue to evolve freely, we must not allow it to become a centralized, controlled system and advocate for it to remain a free, open-source space.

Final Summary

There is an evolution of everything. Over the twentieth century, we've seen an unstoppable rise in the quality of life of almost everyone on the planet, we've seen the swelling of income, the conquest of disease, the disappearance of parasites, the lengthening of life, advances in technology, and more. Yet, despite all these amazing feats, we still find that many people define our past by disasters like wars, depressions, and crises. But the bad news is manmade, it comes from the top-down. The good news, however, is accidental, unplanned, and gradually evolves. Take a look at the First World War, the Great Depression, the Nazi regime, and the 2008 financial crises, all of which were the result of top-down decision-making by politicians, bankers, and revolutionaries. Yet, we also have the disappearance of infectious diseases, the clean-up of rivers and air, the internet, mobile phones, the use of genetic fingerprinting to convict criminals, each one the result of a serendipitous, unexpected phenomenon. We have long underestimated the power of spontaneous, constructive change. But now it's time to embrace the general theory of evolution and admit that everything evolves.

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