GOD, TECHNOLOGY, and the CHRISTIAN LIFE

TONY REINKE

"From John Calvin to Wendell Berry and Elon Musk. From world-changing fertilizer to medical innovations and space travel. From the Tower of Babel to the new Jerusalem. From technology as savior to the sovereignty of God. From the boasts of Silicon Valley to the blood of Jesus. Tony Reinke's book *God, Technology, and the Christian Life* is panoramic and penetrating. I doubt there has ever been a more sweeping treatment of technology so firmly tethered to Scripture—and therefore so realistic and hopeful. Writing as a 'tech optimist' who trusts in God's providential orchestration over all things, Reinke offers us an expansive and compelling 'biblical theology of technology.' God's glory is the end of creation and the aim of all innovations. Apart from Christ there is no art, no science, no technology, no agriculture, no microprocessor, and no medical innovation. If God is the center of our life, technology is a great gift. If technology is our savior, we are lost. This is a mind-expanding, heart-stabilizing, God-glorifying, joy-sustaining book."

John Piper, Founder and Teacher, desiringGod.org; Chancellor, Bethlehem College & Seminary; author, *Desiring God*

"Tony Reinke has written a must-read for any Christian seeking to understand God's view of technology. *God, Technology, and the Christian Life* masterfully fuses together scriptural commentary, historical wisdom, and practical application to give a rich, Christian worldview of technology. A more positive view of human innovation and innovators is a breath of fresh air in a cultural moment when technology is viewed more as a harm than a help to many Christians. I will be recommending this to our FaithTech community worldwide."

James Kelly, Founder and CEO, FaithTech

"Reinke not only addresses a wide range of issues in technology and culture; he also brings fresh insights into often overlooked passages of Scripture. He offers an approach to technology that is ethical without being moralistic, careful without being restrictive, and positive without being naive."

John Dyer, Dean and Professor, Dallas Theological Seminary; author, *From the Garden to the City: The Place of Technology in the Story of God*

"As both a pastor and an engineer, I continually find the need to interpret the marvels of the twenty-first century in light of Scripture. To that end, this book has been a great blessing. Tony Reinke has crafted an enlightening, balanced, and thoroughly engaging biblical theology of technology. This work is profoundly practical. All Christians should consider it, whether they live inside a major tech center or not."

Conley Owens, Pastor, Silicon Valley Reformed Baptist Church; Senior Engineer, Google

"Tony has given us a rich suite of resources for the believer who wishes to make sense of technology's increased role in society and in our individual lives. This is not a fear-based, hasty string of reactionary warnings, but a careful look at the complex, intimate, and unavoidable relationship between technology and theology. We are ably guided through a detailed, God-centered tour of the history of technology, from Babel to Bumble, using theologians, inventors, and philosophers. Take advantage of this excellent work."

Jared Oliphint, Philosophy Department, Texas A&M University

"*God, Technology, and the Christian Life* is a dangerous read for the serious-minded believer. Here Reinke unearths the source of all technology from the very pages of Scripture, forcing the Christian to view this evolving fixture of the modern world through the curative lens of a sovereign God and the unfading hope of the gospel. Whether cynical or exhilarated by the breakneck speed of innovation in the twenty-first century, this book will challenge how we all see and interact with our ever-changing world."

Jeremy Patenaude, Pastor, Risen Hope Church, Seattle; writer, Microsoft

"The story of God's glory is still unfolding inside the zeitgeist of the technium. Whether talking about developers inventing new apps in a data center, automated manufacturing robots churning out electric cars, or the eager consumers of these new products and services, this book reminds us that human technology serves God's final purpose for his creation. In this captivating book, Tony offers an optimistic theology of technology that will inspire us to worship the Creator of our most powerful inventors, and—astonishingly so—help us live cautiously and faithfully inside our technological cities. To do it, he demystifies concepts created by well-intentioned Christians over the decades who have made it hard to see that science and technology exist by God, through God, and for God. His glory is reflected in ammonia, lithium, nuclear fission, and in advances to come in nuclear fusion and space travel. *God, Technology, and the Christian Life* is essential reading for pastors, church leaders, and every Christian who lives and works inside the technological cities of man. A wake-up call for us to anticipate Christ's return and the arrival of a new city—a better city—designed and built by God himself."

Jose Luis Cuevas, pastor; missionary; Director of Project Management, Office for VMware Inc., Latin America

"Given the acceleration of automation in every aspect of our lives, we all need to reflect deeply on our technology history and future roadmap. In *God, Technology, and the Christian Life*, Tony Reinke has developed a gospel-centered analysis of our technology-driven culture that is beneficial for both Christians and non-Christians alike."

Bernie Mills, Vice President, VMware Inc.; Board Member, Joni and Friends

God, Technology, and the Christian Life

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God, Technology, and the Christian Life

Tony Reinke

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Dedicated to every Christian living inside demanding and expensive tech centers, unselfishly building churches, and influencing the world's most powerful industries for good.

We have detailed studies about the history of individual technologies and how they came into being. We have analyses of the design process; excellent work on how economic factors influence the design of technologies, how the adoption process works, and how technologies diffuse in the economy. We have analyses of how society shapes technology, and of how technology shapes society. And we have meditations on the meaning of technology, and on technology as determining—or not determining—human history. But we have no agreement on what the word "technology" means, no overall theory of how technologies come into being, no deep understanding of what "innovation" consists of, and no theory of evolution for technology. Missing is a set of overall principles that would give the subject a logical structure, the sort of structure that would help fill these gaps. Missing, in other words, is a theory of technology—an "-ology" of technology.

W. BRIAN ARTHUR

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1

What Is Technology?

PEOPLE DON'T SLOW DOWN much when driving across Nebraska. But tap the brakes the next time you're crossing the Cornhusker state, glance off into a cornfield, and you might see my name in all caps. REINKE is synonymous with agricultural technology. The name swings on metal logos attached to giant farm sprinklers across the Midwest because my grandfather and his five brothers claimed three dozen patents among them for ideas ranging from the aspirational to the multimillion-dollar useful.[1] The ideas that paid off seeded a corporation of center-pivot irrigation systems for farms and aluminum truck beds for semis.

My grandfather's technological ambition was undampened by a lack of schooling past eighth grade. A carpenter, electrician, and farmer, he was awarded a bronze star in World War II for helping to reengineer an antiaircraft aiming computer.[2] Back home, he

1 Susan Harms, "Area Reinkes Are Brothers of Invention," *Hastings Daily Tribune* (n.d.), n.p.

2 I know little detail of the "M5A1 Director" 40mm gun directing/aiming device beyond the description in Captain Kirby M. Quinn, "Gunning for War Birds," *Popular Mechanics*, December 1933, 801–4.

aspired to modernize rural homesteads, turning hundred-year-old houses built prior to running water into electrified homes powered by batteries recharged by aluminum windmills. In his personal machine shop, he invented and manufactured copper heat exchangers to cool irrigation engines with groundwater.

When electrical costs soared in 1978, my grandfather designed and built an aluminum windmill using a centripetal flywheel to automatically pitch the blades based on wind speed, making it possible to generate electricity with either high wind or very little.[3] He was fascinated by aluminum. For fun, he crafted the first aluminum violin I have ever seen (and thankfully the last one I have ever heard).[4] By the time my grandfather retired, I was in high school, and he cleaned out his workshop by giving me a pile of abandoned aluminum projects. It took me weeks to pneumatically chisel thousands of aluminum rivets off iron structures, but it paid off. By the end of that summer, the pile of broken rivets and the sheets of scrap metal registered into an aluminum pile that I recycled for one thousand dollars. It helped pay for college. But more memorably, it put me in close proximity to the remnants of my grandfather's ambitious dreams.

Innovation is in the Reinke blood. But technology is deeply connected to each of us. The story of humanity is the story of technology. The prophet Daniel marked off successive kingdoms by dominant metals: gold, silver, bronze, iron, iron-clay.[5] We mark

3 Claire Hurlbert, "Davenport Man Plugs into Nebraska's Wind Power," *Hastings Daily Tribune*, August 26, 1978, n.p.

4 He apparently was not alone. Aluminum bass violins were featured in *Popular Mechanics* (December 1933) boasting of "a tonal quality comparing favorably with the finest wood basses" (805). I harbor doubts, but aluminum instruments were a cultural aspiration in his era.

5 Dan. 2:31–45.

off human history by the Stone Age, the Bronze Age, the Iron Age, the nuclear age, and the computer age. Today, we live in the age of technology. This long-running drama of innovation includes each of us. No family tree is uninventive.

This Reinke lives inside an accelerating tech age that the world has never seen. I don't think my grandfather ever touched a PC, but someday I may be biologically linked to a superprocessor. My father, himself very inventive, was mesmerized by the moon landing. But in my lifetime, I expect to see commercial flights to the moon. Right now, I could spit saliva in a tube, mail it, and get a full mapping of my heredity and genetic susceptibilities. My great grandkids may live on Mars. I have witnessed incredible changes in my first forty years on this planet and, Lord willing, I brace for more outrageous changes to come in the forty years ahead—or century ahead, if the prophets of life expectancy are right.

I don't innovate in a farm shop like my grandfather; I write in the outskirts of a major city, surrounded by technology. As I type, my robot vacuum bumps my feet, stops, turns, bumps, stops, turns, and bumps again, self-correcting like a blind turtle as it cleans the carpet in my office. Specialized automated robots, like my vacuum droid, can do one thing well, but nothing else. Remote-controlled bomb-detonating robots sync with other semiautonomous service robots. Prototype dog-like robots and human-like robots are in the works at major science labs. And at the far ends of the robotics industry are inhuman sex robots and weaponized killing robots. And the first-ever, fully autonomous robots are likely to appear in the next several years. We call them driverless cars.

We are entering a new technological revolution that's impossible to predict. It's a good time for Christians to think about God's relationship to technology as we ask questions about the origin

of our gadgets. What technologies are helpful or destructive? And how can we walk by faith in the age ahead? First, we must tackle a fundamental question: What is technology?

What Is Technology?

Technology is applied science and amplified power. It's art, method, know-how, formulas, and expertise. The word *technology* is built on the root *techne-* or *technique*. We amplify our native powers through new techniques. Noah and the animals could never outswim a global flood, so God designed a ship. The people of Babel couldn't live in the sky, so they engineered a tower. Today, elevators in downtown Dubai carry people into the stratosphere. Jacob and his sons dug wells by hand and shovel, but Union Pacific blasted trails through the mountains with dynamite. Today, dinosaur-sized augers grind out underground tunnels for millions of telecom cables. And the smartphone extends the popping electrical explosions in our brains, through our thumbs, to our phones to become little digital ones and zeroes that we broadcast in messages to influence the world.

Tech intensifies our dexterity, augments our influence, and empowers our previously feeble intentions. And no innovation more potently amplifies us like the computer chip. By weight these little chips are the most powerful things in the continuous universe. Excluding cosmic explosions and nuclear bombs that exhaust their power in a hyperblink, "of all the sustainable things in the universe, from a planet to a star, from a daisy to an automobile, from a brain to an eye, the thing that is able to conduct the highest density of power—the most energy flowing through a gram of matter each second—lies at the core of your laptop." Yes, the tiny microprocessor "conducts more energy per second per gram through its tiny

corridors than animals, volcanoes, or the sun." The computer chip is "the most energetically active thing in the known universe."[6]

As I write, Apple has just unveiled M1, "the most powerful chip" the company has ever made, "packed with an astounding 16 billion transistors."[7] With this much power in every iPhone and MacBook, we can do a lot with our tools—a lot of damage or a lot of good. So how will we wield this power?

Learned techniques are ancient too. When the Good Samaritan found a bleeding Jew on the street, he jumped into action, binding the wounds and applying topical treatments before loading the man's weight like cargo on his animal and transporting him to an inn where he paid with money he made in the market so the innkeeper would continue the work of applying healing measures.[8] The story shows us love in action through technique. We don't love "by smiling in abstract beneficence on our neighbors," wrote agrarian Wendell Berry. No, our love "must come to acts, which must come from skills. Real charity calls for the study of agriculture soil husbandry, engineering, architecture, mining, manufacturing, transportation, the making of monuments and pictures, songs and stories. It calls not just for skills but for the study and criticism of skills, because in all of them a choice must be made: they can be used either charitably or uncharitably."[9] We love one another through art, skill, and technology.

The story of humanity tells the tale of how we have learned to love each other more by improving our skills. Back in the fifth century, Augustine pondered all the ways that we use our talents

6 Kevin Kelly, *What Technology Wants* (New York: Penguin, 2011), 59–60.

7 "Apple Unleashes M1," press release, apple.com (Nov. 10, 2020).

8 Luke 10:30–37.

9 Wendell Berry, *Essays 1969–1990*, ed. Jack Shoemaker (New York: Library of America, 2019), 525.

to serve society. He praised the intellect of fallen sinners, the intact "natural genius of man," that creates remarkable necessary inventions (and unnecessary ones too). When making a list of innovations that caught his attention, Augustine began with textiles, architecture, agriculture, and navigation. Then he celebrated sculptors, painters, composers, and theater producers. Then he turned his attention to nature, and all the ways humans capture, kill, or train wild animals. Then he thought of all the medical drugs that preserve and restore human health, without forgetting the weapons used to defend one's country in war. Next, he praised the "endless variety of condiments and sauces which culinary art has discovered to minister to the pleasures of the palate." (Translation: give thanks for Chick-fil-A Sauce.) Next, he commended all the means we have created for speaking and writing and communicating, from rhetoric and poems to novels and lyrics. And then he praised musicians with instruments and songs. Mathematicians next. Then astronomers. For Augustine, you can pick any branch of science, follow its course, and be captivated by human ingenuity. Over every imaginative invention of man we celebrate "the Creator of this noble human nature" who is "the true and supreme God whose providence rules all that he has created."[10]

Everything mentioned here by Augustine (down to sauces), includes applied science, or *technology*. In 1829 Jacob Bigelow published a book with that relatively new term in the title: *Elements of Technology*, a book to celebrate advances in human writing, painting, sculpting, architecture, building, heating, ventilation, lighting, wheels, machines, textiles, metallurgy, and food preservation. All

10 Augustine of Hippo, *The City of God*, bks. 17–22, ed. Hermigild Dressler, trans. Gerald G. Walsh and Daniel J. Honan, vol. 24, *The Fathers of the Church* (Washington, DC: Catholic University of America Press, 1954), 484–85.

of these advances are *technology*—"a word sufficiently expressive, which," he said, "is beginning to be revived in the literature of practical men at the present day."[11]

It caught on. *Technology* is now a household term for all the tools we wield. We innovate through skills. We make new techniques. Technology is essential to who we are, in every era—from the age of the semiautomatic rifle to the age of the slingshot.

A Famous Tech Story

Our technologies can be primitive or advanced, a distinction that reminds me of the story of David and Goliath, two technologists who clashed in 1 Samuel 17:4–40. Here's how the story begins, with advanced weaponry in verses 4–11.

> 4And there came out from the camp of the Philistines a champion named Goliath of Gath, whose height was six cubits and a span. 5 He had a helmet of bronze on his head, and he was armed with a coat of mail, and the weight of the coat was five thousand shekels of bronze. 6 And he had bronze armor on his legs, and a javelin of bronze slung between his shoulders. 7 The shaft of his spear was like a weaver's beam, and his spear's head weighed six hundred shekels of iron. And his shield-bearer went before him. 8 He stood and shouted to the ranks of Israel, "Why have you come out to draw up for battle? Am I not a Philistine, and are you not servants of Saul? Choose a man for yourselves, and let him come down to me. 9 If he is able to fight with me and kill me, then we will be your servants. But if I prevail against him and kill him, then you shall be our servants

11 Jacob Bigelow, *Elements of Technology* (Boston: Hilliard, Gray, Little & Wilkins, 1829), *iv*.

and serve us." [10] And the Philistine said, "I defy the ranks of Israel this day. Give me a man, that we may fight together." [11] When Saul and all Israel heard these words of the Philistine, they were dismayed and greatly afraid.

Goliath was a giant, a champion and elite warrior, outfitted head to toe with the greatest weaponry he had plundered from across the ancient world. His battle tech was an assortment of superior pieces he amassed over the years as a professional warrior.

Saul was Israel's closest thing to a giant, head and shoulders taller than anyone else in the nation.[12] He was also their first king and the warrior most likely to be nudged out into this one-on-one fight. But he responded to Goliath in fear and unbelief. In Saul's place, a young shepherd stepped out in faith.

[32] David said to Saul, "Let no man's heart fail because of him. Your servant will go and fight with this Philistine." [33] And Saul said to David, "You are not able to go against this Philistine to fight with him, for you are but a youth, and he has been a man of war from his youth." [34] But David said to Saul, "Your servant used to keep sheep for his father. And when there came a lion, or a bear, and took a lamb from the flock, [35] I went after him and struck him and delivered it out of his mouth. And if he arose against me, I caught him by his beard and struck him and killed him. [36] Your servant has struck down both lions and bears, and this uncircumcised Philistine shall be like one of them, for he has defied the armies of the living God." [37] And David said, "The LORD who delivered me from the paw of the lion and from the

12 1 Sam. 9:2; 10:23.

> paw of the bear will deliver me from the hand of this Philistine."
> And Saul said to David, "Go, and the LORD be with you!"

Goliath had been killing men in battle for many years. He was a pagan warrior bred to slay, an ancient terminator with metal-shrouded flesh and tech-augmented strength. He was outfitted with the latest body armor and engineered weapons, all supersized to amplify his own native powers. In this story, as in other Old Testament battles, God's people were poorly equipped to face off against far more technologically powerful armies like the Philistines.

So when a young Jewish shepherd volunteered to fight the Philistine super-soldier, conventional wisdom said that David, too, must be outfitted for war. So the boy tried on the king's war machinery.

> 38 Then Saul clothed David with his armor. He put a helmet of
> bronze on his head and clothed him with a coat of mail, 39 and
> David strapped his sword over his armor. And he tried in vain to
> go, for he had not tested them. Then David said to Saul, "I can-
> not go with these, for I have not tested them." So David put them
> off. 40 Then he took his staff in his hand and chose five smooth
> stones from the brook and put them in his shepherd's pouch.
> His sling was in his hand, and he approached the Philistine.

The fundamental problem here is that David and Goliath were mismatched in their energy potential. In ancient battles, the smaller army was the underdog. Force wins battles, and the larger army usually won. Whether we're talking about the combined kinetic energy of sword-bearing field soldiers, the ferocity of horse-powered chariots, the elastic potential energy behind arrows in full draw, the explosive potential of gunpowder behind a bullet, or the energy

launched inside the warhead of a ballistic missile—wars are won by unleashing superior energy. In measurements of energy potential, Goliath was unrivaled, a weapon of mass dynamism, a small army in himself.

In a quick attempt to level the field and boost David's deficient power potential, Saul outfitted the young shepherd with his own war tech. David would have more power with armor and a sword, but verse 39 tells us that the boy had no experience with the gear. He lacked the proper technique. And without the technique, the advanced war tech was pointless because it could not do what it was made to do: amplify human energy and power.

Instead, David geared up with a familiar technique. Contrary to mistaken applications of this text that pit faith *against* technology, David had both. He had faith in God and technology at his side. David's whirling sling is a great example of technique—amplifying, focusing, and concentrating the animate energy of his arm to fire a smooth stone. David's sling was an early advance in the rich history of tech. That story began with levers and pulleys that amplified the power of animals and humans, then added more efficient inanimate power sources, like water (water wheels), wind (windmills), fire and coal (steam engines), electricity, fossil fuels, and nuclear power. The central storyline of human innovation follows how we discover more potent power sources, concentrate them, store them, and deploy them in demonstrations of greater and greater power.

So in this ancient one-on-one showdown we see a technological mismatch—but not in the direction we first assume. Goliath enters with technology suited for the front line in close-quarters combat with multiple enemies. David enters the standoff as a sniper. Assuming he has good aim, David proves to be the master

technologist. His technology may be more primitive and useless in close-quarters combat. But as a projectile at this range, David's technique is superior. And yet his technique is small—small enough to put the focus on his faith. So David says to the giant: "You come to me with a sword and with a spear and with a javelin, but I come to you in the name of the LORD of hosts, the God of the armies of Israel, whom you have defied" (1 Sam. 17:45).

You know how it ends. The sling hits its mark. Goliath is knocked to the ground. David wields the giant's own sword and finishes the duel.[13] That sword will become David's sword.[14] And from this point, David will acclimate quickly to armor, shields, and blades.[15]

In the end, this epic face-off is not about whether technology is good or bad or whose technologies were better or worse. The point of the story is that in a clash between the gods of the Philistine giant and the living God of David, David's God wins. God's strength is made clear in David's weakness. That's the point. Whatever role human power and innovation play in this story, those roles are footnotes.

Yet we are left with a simple and profound example of two different levels of tech advance: cutting edge versus rudimentary. Both require technique. Both are technologies. Both amplify the power of their users.

The *Technium*

It's hard for us to appreciate the technology in this ancient battle because our powers today dwarf slingshots and swords. And old, animate power sources (like horses and oxen) are laughably weak

13 1 Sam. 17:50–51.

14 1 Sam. 21:7–9.

15 1 Sam. 18:4–5; 25:13.

in light of our modern, concentrated, inanimate power sources (like gas and electricity). We amass power into fuel tanks, batteries, and nuclear cores. But as I hope to show you in this book, all these advances are chapters in one big story.

Those chapters unfold like stages. First, technologies begin by amplifying and channeling animate power. Think of driving a carriage and using the leather lash to convert horsepower into the horizontal movement of wheels. Next come inanimate power sources under the direct control of humans. Think of driving the family minivan powered by exploding gasoline. These powers lead to a third stage, to semiautonomous systems that can operate apart from ongoing human input. Think of "self-driving" electric cars today, which still require the oversight of a human driver. The technologies we read about in the Bible all fall into the first stage. But our lives today are a mix of all three stages—spoons, cordless drills, and air-conditioners with thermostats.

Combined, our accumulated powers make us magicians. We can speed our bodies in a car at 70 mph. We can fly in an airplane at 575 mph. We can shoot a bullet at 1,700 mph. We can thumb a digital message to a thousand people at light speed. The power at our fingertips is truly remarkable.

But there's an emerging challenge on the horizon. Individual technologies that we can use are quickly becoming an ecosystem of technology we cannot escape. We have entered an age in which all of our techno-wonders are becoming so interconnected that they take on biological evolutionary characteristics—a seventh kingdom in nature, a unified and reinforced ecosystem. Kevin Kelly, cofounder of *Wired* magazine, calls the system the *technium*. Technology has reached a "self-amplifying" and "self-reinforcing system of creation," the point when "our system of tools and ma-

chines and ideas became so dense in feedback loops and complex interactions that it spawned a bit of independence."[16]

Inside this technium, older machines with various strengths get consolidated into new machines, with all their old powers added to even newer and more potent powers. "These combinations are like mating," writes Kelly. "They produce a hereditary tree of ancestral technologies. Just as in Darwinian evolution, tiny improvements are rewarded with more copies so that innovations spread steadily through the population. Older ideas merge and hatch idea-lings. Not only do technologies form ecosystems of cross-supported allies, but they also form evolutionary lines. The technium can really only be understood as a type of evolutionary life."[17] As a side note, many Christians find in Darwinism a sure explanation for the origins of biological life.[18] I don't.[19] But I also think that Kelly is right to use the theory of evolution as a metaphor for the tech age. Our machines mate by consolidating strengths. Supercomputers and robots inch their way toward autonomous intelligence, perhaps on a trajectory to a time when computers and robots will improve themselves without our help.

In evolutionary terms, every innovation of the future is built by recondensing or recombining the lineage of prior innovations into

16 Kelly, *What Technology Wants*, 11–12, 38.

17 Kelly, *What Technology Wants*, 45.

18 See Francis S. Collins, *The Language of God: A Scientist Presents Evidence for Belief* (New York: Free Press, 2007), 85–107. Collins claims evolution "as a mechanism, can be and must be true" (107). Without it "biology and medicine would be impossible to understand" (133). For a better take, see *Theistic Evolution: A Scientific, Philosophical, and Theological Critique*, ed. J. P. Moreland, Stephen C. Meyer, et al. (Wheaton, IL: Crossway, 2017).

19 See Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution* (New York: Free Press, 2006); *The Edge of Evolution: The Search for the Limits of Darwinism* (New York: Free Press, 2007); *Darwin Devolves: The New Science about DNA That Challenges Evolution* (San Francisco: HarperOne, 2019); and *A Mousetrap for Darwin* (Seattle: Discovery Institute, 2020).

new innovations. These first-gen innovations become ever-newer innovations in the future. Over time, they grow together into something of a unifying organism. In the end, writes Kelly, "this global-scale, circular, interconnected network of systems, subsystems, machines, pipes, roads, wires, conveyor belts, automobiles, servers and routers, codes, calculators, sensors, archives, activators, collective memory, and power generators—this whole grand contraption of interrelated and interdependent pieces forms a single system."[20] Very few technologies, if any, can be surgically extracted from this technium. So how do we respond?

The answer splits between dystopians and utopians.

On one hand, religious folks in particular tend to be tech dystopians and pessimists who view the technium as rebuilt Babel. Mankind is unified in rejection of God, in a technological evolution that God cannot stop, or chooses not to stop, until he eventually steps in and burns the whole experiment to the ground. The logical response for people of faith is to join the Amish outside the combustible city.

On the other hand, Darwinists and posthumanists tend to envision a world where human and machine blend together in a single existence, moving toward a heavenly utopia. They embrace the product of a technology that is "stitching together all the minds of the living, wrapping the planet in a vibrating cloak of electronic nerves, entire continents of machines conversing with one another."[21] The vision is a new and improved Babel 2.0, mankind reunified and augmented with innovation and machine power to self-exist forever.

I land somewhere in this mix, not a dystopian and not a utopian, but a Bible-believing creationist, Reformed in my theology,

20 Kelly, *What Technology Wants*, 8–9.

21 Kelly, *What Technology Wants*, 358.

trusting in God's providential orchestration over all things. I'm a city dweller concerned with the selfish motives at work in Silicon Valley, yet I'm also a tech optimist, eager to see and experience the future possibilities that lie ahead. In both cases, I'm sobered by a revelation that reminds me that the storyline of human tech will get fumbled and end badly too. I'll attempt to explain all this as we go.

The Path Ahead

This book is a roundtable with nine historic voices, framed by nine key texts of Scripture, as I seek to unseat twelve common myths about technology.

Here are brief profiles of the nine voices that will pop up throughout the book.

John Calvin (1509–1564), a French Reformer, celebrated theologian, and creationist who spawned an international movement that celebrated city building, culture making, and the scientific discoveries of non-Christians. He called Christians to hard work and frugality and put an end to "the religious and social stigma attached to wealth."[22] He brought peace between faith and science, opening the door for Christians to pursue science as an act of worship to God and love for neighbor.

Charles Haddon Spurgeon (1834–1892), a British pastor, Reformed Baptist, creationist, and one of the most famous Christian preachers in church history. A wide-eyed student of the cutting-edge innovations of his age, Spurgeon was Christ-centered and cut it straight about what technology could never accomplish.

22 Alister E. McGrath, *A Life of John Calvin: A Study in the Shaping of Western Culture* (Hoboken, NJ: Wiley-Blackwell, 1993), 219–61.

Abraham Kuyper (1837–1920), a Dutch neo-Calvinist, theologian, journalist, and one-time prime minister of the Netherlands. Kuyper was a creationist who took Calvin's worldview, pushed it to its optimistic limit, and celebrated the common grace of man's scientific future.

Herman Bavinck (1854–1921), a Dutch neo-Calvinist, widely celebrated theologian, and creationist who built from Calvin's vision a cautious approach toward innovation. Bavinck identified the spiritual challenges of the technologies of the past, the present, and the future.

Jacques Ellul (1912–1994), a French philosopher, Christian, and tech pessimist who believed that every innovation introduces more problems than solutions. Ellul protested against the economic and political technocracy that stood in direct conflict with Christian discipleship.

Wendell Berry (1934–), an American novelist, essayist, and conservationist known for his advocacy of rural life and belligerence toward big tech. Berry frames his conservationism through a Christian worldview, albeit in ways that are a little shallow on doctrine.

Kevin Kelly (1952–), an American cofounder of *Wired* magazine, conservationist, and decades-long reporter from the front lines of American technology. Kelly is a tech optimist in vision but a tech minimalist in application—a lifestyle he adapted from the Amish. He's a Darwinist, claims a religious conversion experience, and reconciles God and tech via open

theism, the idea that God watches with surprise to see what we will invent next.

Elon Musk (1971–), an American billionaire, eccentric entrepreneur, and technologist behind some of America's most ambitious companies like Tesla, SpaceX, and Neuralink. He is pushing forward space exploration with the goal of colonizing Mars but is known more immediately for his successful endeavors in electricity and self-driving cars. When asked if science and religion can coexist, he said, "Probably not."[23] Musk advocates simulation theory, that we don't live inside a base reality but exist more likely inside one of many Matrix-like simulation programs designed by a superior intelligence.

Yuval Noah Harari (1976–), an Israeli professor of history, adamant atheist, and bestselling author who earned the title "The Historian of the Future." A convinced Darwinist, Harari is an Orwellian tech dystopian attempting to shake people with two predictions in the form of two new religions: *techno-humanism*, a world of genetically modified superhumans augmented with new computing powers; and *dataism*, where ultimate authority rests in the most powerful computing being, once man, soon to become artificial intelligence (AI).

Alongside a conversation with these nine voices (and a few others), the book is organized around the study of nine key sections of Scripture: Genesis 4:1–26; 6:11–22; 11:1–9; 1 Samuel 17:1–58; Job 28:1–28; Psalm 20:1–9; Isaiah 28:23–29; 54:16–17; and

23 SoulPancake, "Elon Musk Captured by Rainn Wilson!" youtube.com (Mar. 18, 2013).

Revelation 18:1–24. Many others could be added, but these are the most important.

As we study these important blocks of Scripture, may I ask a favor? As readers, we tend to skim indented quotes (I know, because I do it too). But please don't. Please read every indented text with special care.

As we move along, I'll highlight key takeaways and dispel the most common myths about technology I hear and see in the church, particularly these twelve:

Myth 1: Human innovation is an inorganic imposition forced onto the created order.

Myth 2: Humans set the technological limits and possibilities over creation.

Myth 3: Human innovation is autonomous, unlimited, and unchecked.

Myth 4: God is unrelated to the improvements of human innovation.

Myth 5: Non-Christian inventors cannot fulfill the will of God.

Myth 6: God will send the most beneficial innovations through Christians.

Myth 7: Humans can unleash techno-powers beyond the control of God.

Myth 8: Innovations are good as long as they are pragmatically useful.

Myth 9: God governs only virtuous technologies.

Myth 10: God didn't have the iPhone in mind when he created the world.

Myth 11: Our discovery of atomic power was a mistake that God never intended.

Myth 12: Christian flourishing hinges on my adoption or rejection of the technium.

Faith and Physics

Since before the Enlightenment, science and the church have often been friends and sometimes enemies. The tension was not always the fault of science. This clash is unfortunate, because in a grassy valley in the middle of ancient Israel, God's man, David, wielded physics and faith at the same time. Can we learn to do the same? Can we find a life of faith within this world of amplified human possibility? Can we find a place where God-centered trust and technique-wielding skill complement one another?

The agnostic technocrat thinks that he must shove God aside for technology to flourish. The Christian agrarian thinks that he must shove technology aside in order for faith to thrive. But both the tech optimist and the tech pessimist sell God short. Even the most procreation, material-celebrating forms of Christianity struggle to know what to do with smartphones, space exploration, and gene-based medicine.

Christians rebuke gnosticism. In Christ we celebrate the material world, like freshly brewed coffee, blossoming fruit trees, hot bread, soft butter, and warm honey. Nature and gardens and sunshine and play and laughter are gifts to be enjoyed. So, too, are dances, weddings, and married sex. But should we also celebrate the smartphone, the microprocessor, and the nuclear core? If it plugs into the electrical grid, can we celebrate it?

People of faith have sometimes undermined thoughtful conversations on technology by dismissing human innovation with terms of domination (like *technopoly*) and a few other -isms (like *technicism*, *scientism,* and *economicism).*

I think we need a new discussion, and this book is my attempt. My previous book covered Christian living in the attention economy.[24] Before that, I wrote a book on smartphones and how digital technology is changing our lives. There I first laid out a brief, ten-page outline of how I understand the tech world through Scripture.[25] Over the following years, that summary generated robust conversations, and I knew that I would need to develop my outline into a book. So here it is, my -ology of technology, my biblical theology of technology.

One of my original titles for this book was *A Christian Optimist's Guide to Modern Technology*. Tech is not all roses, but it's not all bad Apples either. This book is my case for a more positive view of human innovation and innovators. As a tech optimist, I know that this book would market better as an alarmist, doomsday warning about how Satan hijacked the electrical grid, controls us through our smartphones, and wants to implant us with the digital mark of the beast. I would sell you a vast conspiracy coupled with a theology of a powerless god who doesn't know what to do. I would put the future of the world in your hands as our only hope. I would focus your attention on the scariest new tech so you would ignore the glories of the vast tech advances that adorn your daily life. I would end with an appendix on how to dig out a bunker for a rural, off-grid commune. And I'd write the whole book with the caps-lock on. Fear sells books, but my theology—what I know about the gloriously sovereign Creator and his incredible creation—forbids me from stoking more fear. So I'm optimistic—not optimistic in man, but in the God who governs every square inch of Silicon Valley.

24 Tony Reinke, *Competing Spectacles: Treasuring Christ in the Media Age* (Wheaton, IL: Crossway, 2019).

25 Tony Reinke, *12 Ways Your Phone Is Changing You* (Wheaton, IL: Crossway, 2017), 29–39.

In the pages ahead, I extend my research beyond media and smartphones to find answers that have alluded the world, from Babel's tower to SpaceX's rockets. "Technology in fact is one of the most completely known parts of the human experience," writes technology theorist Brian Arthur. "Yet of its essence—the deep nature of its being—we know little."[26] This is true both outside and inside the church. Do our innovations threaten God? Do they make him more irrelevant to life? What is God's relationship to Silicon Valley and Silicon Alley? How does he relate to our most impressive innovators? Is God threatened by the technium? Where do our technologies and gadgets come from? What can technologies do for us? What can they *never* do for us? And how much tech is too much tech in the Christian life?

We need answers.

26 W. Brian Arthur, *The Nature of Technology: What It Is and How It Evolves* (New York: Penguin, 2009), 13.