

HIGH STAKES FOR HUMANITY

A Guide for Christians
in a Technological Age

Dedication

To my fellow humans, made in God's image,
and to Jesus our Creator, with love.

1 Corinthians 16:13–14

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High Stakes for Humanity

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On that note, I’d like to thank you (yes, you), the reader, for picking up this resource. God knew you would be finding these words, and I pray that he fulfills every purpose he has in mind for them in relation to you. May he draw you ever closer to himself, strengthening you with wisdom to live out his Word in our technological age.

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FOREWORD

God is the God of history.

“I am God, and there is no one like Me, declaring the end from the beginning, and from ancient times things which have not been done, saying, ‘My counsel will be established, and I will accomplish all My good pleasure’” (Isaiah 46:9–10 LSB). From eternity past, God saw and declared what would come to pass—including the advent of the technologies that have swept at breathtaking pace through our world, turning it upside down. But his Word does not address artificial intelligence, virtual reality, gene editing, or reproductive technologies . . . or does it?

God’s Word is the revelation of the eternal, all-knowing, infallible God, giving us the key information we need to build the right worldview (biblical worldview) for interpreting the world around us. God’s Word stands forever (Isaiah 40:8), God is the same yesterday, today, and forever (Hebrews 13:8), and therefore his Word is for all peoples, in all times. We can trust that he has not left us rudderless in navigating the moral, philosophical, and ethical questions of the modern era.

Just as past generations have had God’s Word to guide them through emerging technologies, tragedies, cultural tumult, and confusing situations, we have God’s Word for today. The framework and key worldview information God has given us in his Word are exactly what he knew we’d need for the world we’re in today.

And that key information starts in Genesis. Over the past 50 years of speaking on creation apologetics, I’ve said over and over that the answer to any issue—any issue—is Genesis 1–11. With the advent of generative AI and hyperrealistic VR, that remains true. To think biblically about technologies and put their usage in its proper place, we must start with the blueprint for humanity God gave us, starting in Genesis.

We must understand that humans are unique, made in the image of God, that we're creatures under the authority of the Creator—not gods ourselves—and that everything has been affected by sin and the curse on creation. Yes, it's in Genesis that we find the answers for our modern era's complexities.

This new book is an essential resource amid a bewildering amount of change. Grounded in eternal principles and truths from God's Word, it's a breath of clarity and practical wisdom. No one knows yet how emerging technologies will change the world, for better or for worse. But the principles Patricia lays out are extremely helpful and needed for Christians now as these technologies arise and into the future as new, not-even-thought-of-yet technologies begin to dominate.

As Christians, it's crucial that we equip ourselves now to think biblically. The world is working hard to indoctrinate us toward a particular view of technology, but our worldview must start with God and his perfect Word, not with our own ideas or the thinking of those around us.

As always, these words from Proverbs must be impressed on our hearts:

*Trust in Yahweh with all your heart
And do not lean on your own understanding.
In all your ways acknowledge Him,
And He will make your paths straight.
Do not be wise in your own eyes;
Fear Yahweh and turn away from evil.
It will be healing to your body
And refreshment to your bones.*

PROVERBS 3:5-8 (LSB)

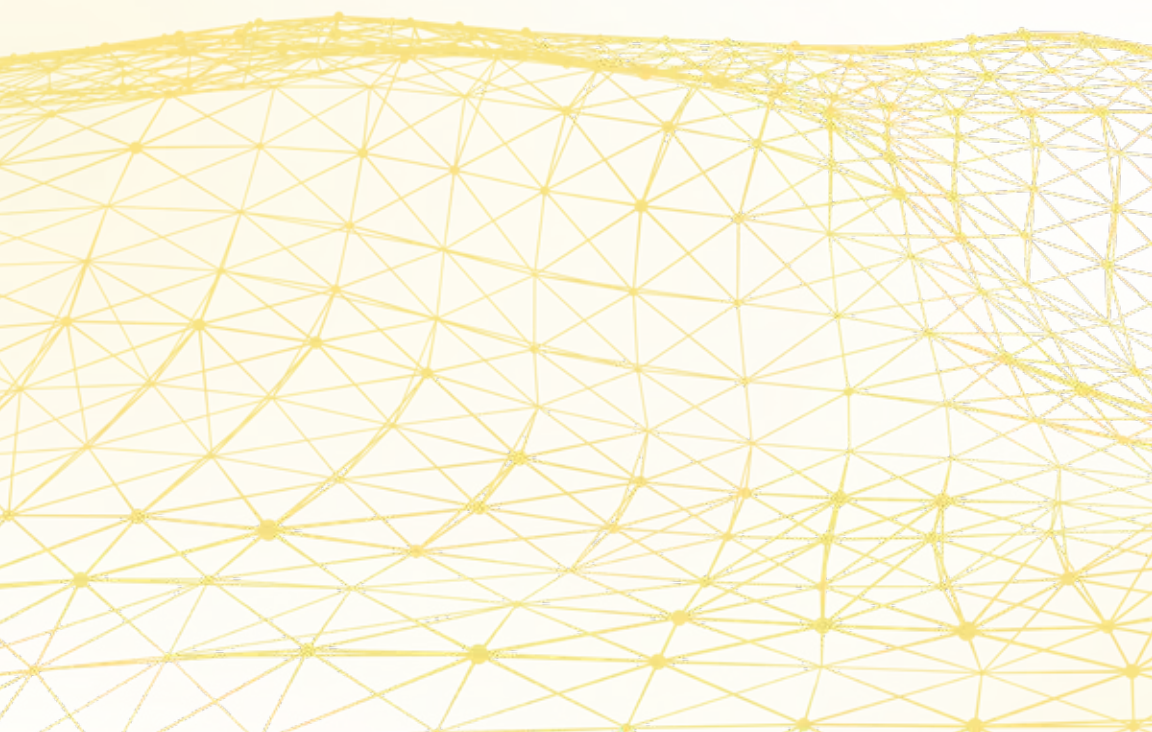
In Christ,

A handwritten signature in black ink that reads "Ken Ham". The signature is written in a cursive, flowing style.

Ken Ham

*Founder of Answers in Genesis,
the Ark Encounter, and the Creation Museum*

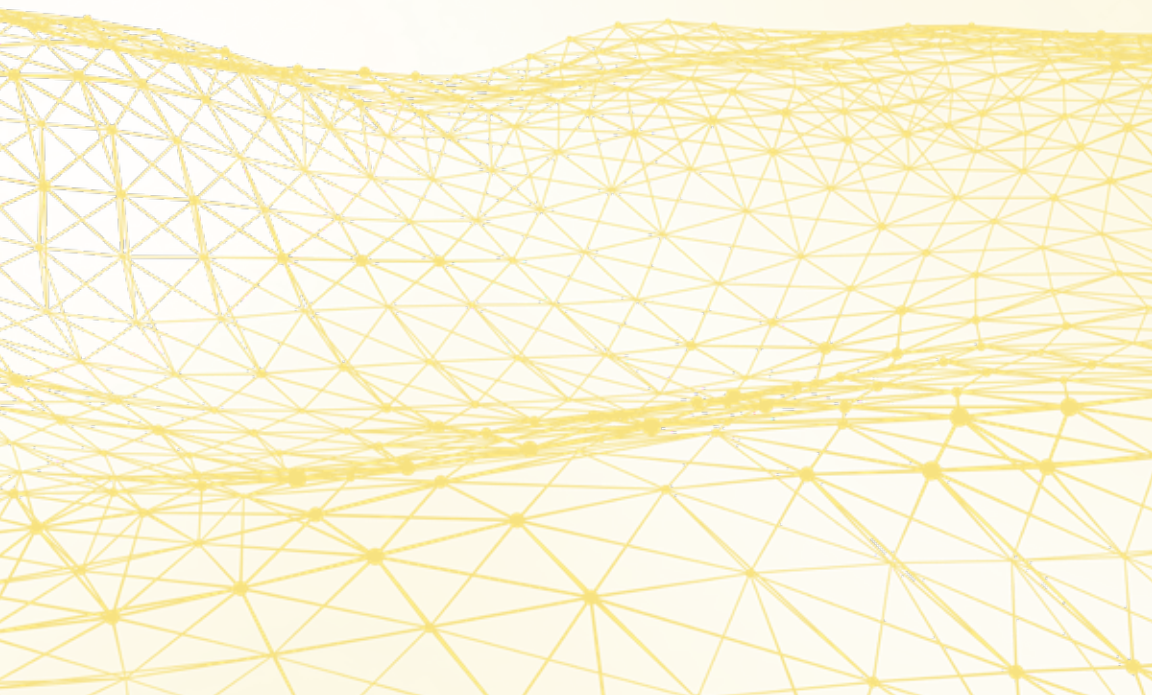
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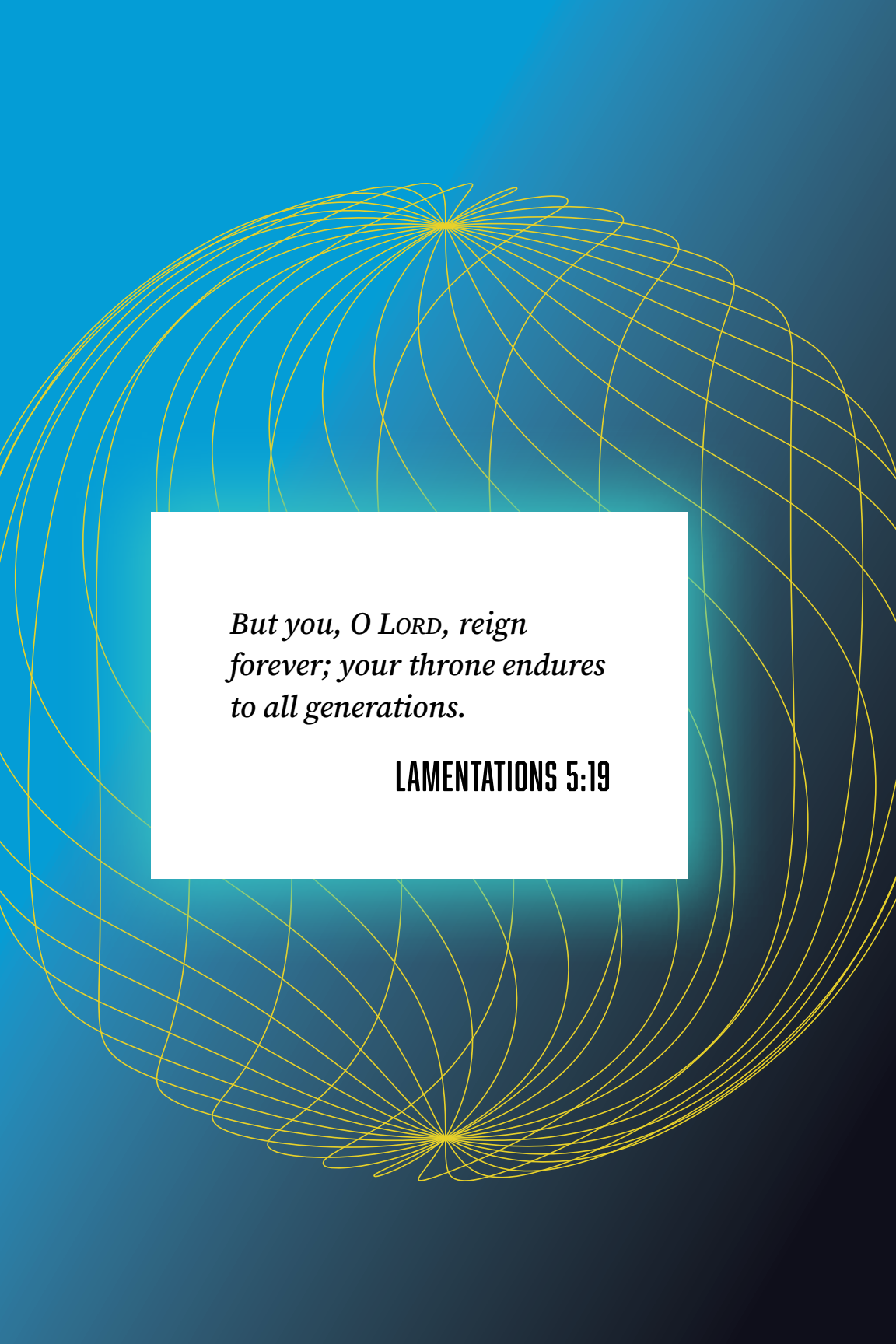




PART 1

WORLDVIEW BATTLES





*But you, O LORD, reign
forever; your throne endures
to all generations.*

LAMENTATIONS 5:19

INTRODUCING THE FUTURE

Which of these statements are science fiction, and which are reality?

- A man who identifies as a cyborg implanted an antenna in his head that lets him sense infrared and hear colors.
- You can buy a computer that contains lab-grown, living, human brain cells.
- Engineers have turned dragonflies into remote-controllable “living drones.”
- AI-powered robots are assembling batches of human embryos from eggs and sperm, while another AI program decides which embryos should live or die.
- A millionaire traveled to a secluded island to genetically modify himself in hopes of “living forever.”
- By wearing specialized glasses and wristbands, people can twitch their thumbs to use apps that only they can see.
- Multiple people claim to have married customizable AI “spouses.”
- Researchers can guide rats along obstacle courses by using headsets to mentally send signals into the rats’ brains.

If you answered that *all* these are reality, you’d be right.¹ This is just a snapshot of the myriad of new technologies that used to be fantasy. Not long ago, genetically modified humans existed only in fiction. Machines that automate the mass fertilization and destruction of human embryos were the stuff of dystopian movies. And AI that does everything from flying fighter jets to formulating sermons to flirting with teens seemed like something from a far-fetched paperback.

Not anymore.

What do these developments mean for everyday Christians—and for humankind? On the plus side, new technologies unlock extraordinary ways to share the gospel, cure disease, and steward creation. For many people, centuries of technological advances have made life safer, cleaner, and easier than ever. When novel technologies burst into reality, we naturally want to harness these tools' potential to accomplish great things.

That, and—if we're like many people—we might also wince at the thought of falling far behind the times. If everyone else adopts the latest app, device, or program without us, we risk becoming outdated, irrelevant, and excluded. We risk missing out. Between the drive to seize technology's benefits and the dread of being left behind, we have potent motivation to embrace the latest tools.

At the same time, we face uncertainty. Technologies like AI usher us into uncharted territory. As we press forward in hopes of a brilliant horizon, an inner inkling reminds us that people can use technology to do incredible good as well as incredible harm.

Even our best-intentioned uses of technology can bring unexpected consequences. We don't have to look far to see how current technologies are altering the landscape of human existence. They influence our habits, relationships, families, societies, schools, workplaces, and churches. The more powerful the tool, the greater its potential impact for better or worse.

How will these technologies affect our lives, our world, and the people we care about most? Popular expectations about what tools like generative AI will mean for human futures range from utopia to catastrophe. The sheer newness of these technologies makes their consequences tricky to predict. And on top of these uncertainties, we face countless moral questions.

- Should busy pastors use AI to write sermons?
- Should families buy “companion robots” for lonely seniors?
- Should couples genetically edit their embryos to prevent diseases?
- Should grieving people talk to AI replicas of deceased loved ones?
- Should consumers purchase next-generation smart devices that interface with the brain?
- Should Christians plant churches in virtual reality?
- Should parents leverage AI as an “electronic babysitter”?

Where do we even begin to think about these issues? For Christians, God’s Word is the basis for our thinking and decision-making in every area. But clearly, we don’t find words like *artificial intelligence* or *virtual reality* in Scripture. How does the Bible speak to new technologies? What role do Christians play in this unique era of history? And how can we apply a biblical view to steward technology wisely in the AI age?

These are the types of questions I’ve spent the last few years investigating. As a Christian (and a human), I wanted to know what new technologies mean for other Christians and humans. I wondered what risks and benefits these technologies pose, what guidance Scripture offers for using technology, and how Christians can translate that guidance into action. To find out, I went back to school to study bioethics from a Christian perspective. This field looks at how to make moral decisions about topics that directly affect human life, health, and flourishing.

Along the way, I became convinced that as humans alive today, you and I are characters in a pivotal chapter of history. We live in an era where revolutionary technologies are shaping up to radically impact human beings, relationships, and societies. As we make choices about these technologies in the present, we contribute to framing the plotline of the future, for better or worse. Let’s take a minute to clarify the stakes.

The Stakes for Human Beings

From governments to billionaires, powerful voices tell us we stand on the brink of a technological revolution that will drastically alter humanity. According to a report published by the Canadian government,

Biological and digital systems are converging, and could change the way we work, live, and even evolve as a species. More than a technological change, this biodigital convergence may transform the way we understand ourselves and cause us to redefine what we consider human or natural.²

Wait, redefining humanity? That sounds extreme, but it's genuinely on some people's agendas. For instance, we'll see in chapter 3 how the movement called transhumanism seeks to transform human beings through technology. The transhumanist dream is to go beyond the current human state, reach higher stages of evolution, and possibly even become "immortal."

Fueling this dream, technologies that enable radical modification of human genes, bodies, thinking, reproduction, and communication already exist—and are rapidly advancing. Over 20 years ago, the President's Council on Bioethics urged greater public discussion of technologies meant to "enhance" humans.³ The council knew the choices that we make when these technologies are young set us on a trajectory that could shape us in irreversible ways.

The Stakes for Human Relationships

It's not just human bodies, brains, and genes in question. It's also human relationships. For years, researchers have noticed how our uses of technologies like social media, smartphones, and video games affect our personal interactions.⁴ Now, imagine moving these interactions into virtual reality,

adding headsets that reveal people's mental states, and introducing AI that seemingly forms "relationships" with humans.

All these practices have begun. Their long-term effects on human relationships are anyone's guess. But a few trends are already evident:

- Research suggests that switching from face-to-face to digital communication during COVID negatively impacted wellbeing, especially for young people.⁵
- In a 2024 study of 2,000 American young people, one in four thought "AI has the potential to replace real-life romantic relationships."⁶
- By early 2024, romantic chatbot apps on Google Play Store had already scored about a hundred million downloads.⁷

The Stakes for Human Societies

While we can only guess at new technologies' long-term impacts on society, at least two points seem clear. First, the effects will be widespread. We can sense this in how technologies like AI are already transforming major sectors, including healthcare, science, education, creative industries, agriculture, and militaries. Second, multiple key players involved in regulating and developing new technologies hope to apply these technologies to build a new social order.

Take, for instance, a 2020 document titled "A Social Contract for the AI Age," signed by a vice president of Google, among others.⁸ The document overtly intends to "provide the foundations for a new society."⁹ It also requests "a system to monitor and evaluate governments, companies, and individuals" to ensure compliance with this new society's norms.

These norms, incidentally, would align with the United Nations' Sustainable Development Goals and with criteria from the World Economic Forum (WEF). The WEF is especially worth looking at more closely, due to its partnerships with multiple major tech corporations.

As a massive global organization, the WEF describes itself as engaging “the foremost political, business, cultural and other leaders of society to shape global, regional and industry agendas.”¹⁰ Just a few notable partners of the WEF include Meta, Google, Intel, Synchron,¹¹ IBM, Microsoft, Anthropic, and OpenAI.¹² The latter four companies also contribute to the WEF’s Center for the New Economy and Society.¹³

What exactly would this new economy and society look like? While the center’s website doesn’t offer many details, other WEF materials reveal three telling emphases:

More DEI

It’s no secret that diversity, equity, and inclusion (DEI) metrics are widely applied to push conformity with agendas that contradict God’s Word. A quick perusal of WEF publications like the “Diversity, Equity and Inclusion 4.0 Toolkit”¹⁴ will show how invested the WEF is in entrenching DEI. Illustrating how DEI is redefining *good* in ways that villainize “fundamentalists,” one article on the WEF website states,

The global LGBTQ+ community is up against well-organized and well-funded campaigns by the enemies of equality—an unholy axis of religious fundamentalist groups and populist conservative politicians. The stakes are high and business has a unique role to play. This is about more than Pride flags and rainbow logos. It’s about what it means to run a good business.¹⁵

Less Private Ownership

Back in 2018, a WEF video raised eyebrows by predicting that in 2030, “you will own nothing. And you will be happy.”¹⁶ Transitioning from *owning* things to *sharing* or *accessing* items and services is part of the “circular economy” model that the WEF heavily promotes.¹⁷ (More on that in chapter 4.)

More Digital Connectedness (and Surveillance)

Managing the circular economy and enforcing the DEI version of goodness requires monitoring people in ways that digital technologies' data tracking capacities make possible. For example, the WEF's DEI 4.0 Toolkit encourages corporations to use AI to ensure that all employees conform to DEI policies.¹⁸ And an opinion piece on the WEF website noted, "AI can also help strengthen circular economy business models . . . by combining real time and historical data from products and users."¹⁹ In other words, digital surveillance makes the own-nothing-and-be-happy economy go 'round.

In later chapters, we'll find out more about the roles that technologies like AI play in the push for new socioeconomic models—and in the surveillance structure required to enforce them. We'll also see how the push for a new social order ties into destructive worldviews like New Ageism and Marxism.

Now What?

For now, it's clear that, as the President's Council on Bioethics realized, decisions unfolding today are setting a trajectory for humanity's future. Today's children—our kids, grandkids, nieces, nephews, and other young friends—will grow up in this future. Charting this course shouldn't be left up to tech companies, a few billionaires, or the World Economic Forum. Everyday humans should have, and do have, a significant say. Voters, parents, pastors, and consumers can make a difference, one decision at a time.

How will we know what decisions to make?

The answer rings clear in 2 Peter 1:3–8:

His divine power has granted to us all things that pertain to life and godliness, through the knowledge of him who called us to his own glory and excellence, by which he has granted to us his precious and very great promises. . . . For this very reason, make every effort to supplement your faith with virtue, and

virtue with knowledge, and knowledge with self-control, and self-control with steadfastness, and steadfastness with godliness, and godliness with brotherly affection, and brotherly affection with love. For if these qualities are yours and are increasing, they keep you from being ineffective or unfruitful in the knowledge of our Lord Jesus Christ.

God has given us everything we need to navigate this chapter of history *with* him and *for* him. As this passage reminds us, it all begins with knowing God. Proverbs 9:10 assures us, “The fear of the LORD is the beginning of wisdom, and the knowledge of the Holy One is insight.” Knowing God requires both *taking in* his Word and *living out* his Word. Along the way, God helps us develop character traits to become the kind of people who use technology in the right ways, for the right reasons.

We can do so with a clear view of reality because God’s Word gives us a true foundation for thinking about everything. Growing in Scripture enables us to “be complete, equipped for every good work” (2 Timothy 3:17), including works that involve technology.

Although Scripture doesn’t address modern technologies directly, God’s Word does give us timeless truths for making wise decisions about any new technology. Many of these truths originate in Genesis, which reveals vital realities about the kind of beings we are and the kind of world we live in.

If we approach technology in line with these Genesis truths, we can make *faithful progress*, applying technology to flourish as our Creator intended. But if we approach technology from the basis of a faulty belief system, we easily harm ourselves and others.

When it comes to deciding how to use technologies that pose sky-high stakes for humans, starting with a true view of reality is critical. To navigate our technological age in the ways that will best serve humanity, we need a thoroughly biblical

view. We also need to know how to apply that view to draw biblical boundaries for using novel technologies well.

So how can Christians apply a biblical view to using cutting-edge technologies?

That's what this book is about.

The Game Plan

By showing how Genesis truths apply to making wise decisions about any new technology, this book helps Christians understand, evaluate, and biblically approach technologies that impact humanity. Here's how it works:

Part one unveils the worldview battles of our technological era, examining the false gospel of transhumanism and its links to other destructive ideas.

Part two unpacks a biblical view of technology, reveals how Genesis guides wise technological decision-making, and shares a framework for thinking biblically about any technology.

Part three shows how to apply this framework to understand, evaluate, and respond biblically to some of today's most revolutionary technologies.

Certainly, no book can answer all the questions today's technologies raise for Christians—especially because more technologies will always come out, raising further questions. That's why this book will especially focus on teaching how to think biblically about new technologies and the ethical questions they spark.

Along the way, some of the information in these pages might seem a little jarring. Maybe even downright scary. So let's start with a reminder of God's attributes.

The God Who Reigns

Roll back the clock several millennia, head to the palace in ancient Babylon, and you might just meet the prophet Daniel. Best known for his rapport with lions, Daniel is the same man who declared,

Blessed be the name of God forever and ever, to whom belong wisdom and might. He changes times and seasons; he removes kings and sets up kings; he gives wisdom to the wise and knowledge to those who have understanding; he reveals deep and hidden things; he knows what is in the darkness, and the light dwells with him. (Daniel 2:20–22)

As Daniel realized, God is in control over human history, human wisdom, and human endeavors. For example, remember the tower of Babel? Genesis 11:1–9 records that when humans rebelliously tried to build a tower to the heavens, God confused their plans by giving them different languages. One minute, humans were applying their finest brick-baking technology to build the most colossal monument they could imagine. The next, they couldn't even message each other.

The saga of Babel reminds us that not even humans' highest technological aspirations can thwart God's plans. In fact, God can use humanity's worst inventions to accomplish his plans, as he did with the cross. God is sovereign over technology, and over the future. Whatever comes, we can say the words of this old hymn:

Be still, my soul; thy God doth undertake
To guide the future as He has the past.
Thy hope, thy confidence, let nothing shake;
All now mysterious shall be bright at last.
Be still, my soul; the waves and winds still know
His voice who ruled them while He dwelt below.²⁰

With that in mind, let's find out how to think biblically about any technology. To begin, let's unpack the consequences of two different starting points for approaching the technologies that are propelling science fiction into reality.

ENDNOTES

- 1 (a) Will Wei, “Cyborg Neil Harbisson Implanted Antenna,” *Business Insider*, February 10, 2015, www.businessinsider.com/cyborg-neil-harbisson-implanted-antenna-skull-2015-2. (b) Skyler Ware, “World’s First Computer That Combines Human Brain with Silicon Now Available,” *LiveScience*, May 3, 2025, www.livescience.com/technology/computing/worlds-1st-computer-that-combines-human-brain-with-silicon-now-available. (c) Emily Matchar, “Turning Dragonflies into Drones: The DragonflyEye Project Equips the Insects with Solar-Powered Backpacks That Control Their Flight,” *Smithsonian*, February 10, 2017, www.smithsonianmag.com/innovation/turning-dragonflies-drones-180962097/. (d) Elizabeth Dwoskin and Zoeann Murphy, “Robots Are Learning to Make Human Babies. Twenty Have Already Been Born,” *The Washington Post*, October 1, 2025, www.washingtonpost.com/technology/2025/10/01/ivf-babies-ai-robots-fertility/; Elana Spivack, “World’s First Baby Conceived with Remotely Operated, ‘Automated IVF’ Has Been Born,” *LiveScience*, April 14, 2025, www.livescience.com/health/fertility-pregnancy-birth/worlds-first-baby-conceived-with-automated-ivf-has-been-born. The reference to an algorithm selecting “the most viable embryos” based on traits such as chromosomal appearance suggests the destruction of the other embryos, which is also typical in non-robotic IVF. (See chapter 13.) (e) Emily Lefroy, “Millionaire Biohacker Bryan Johnson Reveals He’s Undergone a \$20,000 ‘Extreme Medical Procedure’ to ‘Edit His DNA’ in a Bizarre Bid to ‘Live Forever,’” *Daily Mail UK*, June 17, 2024, www.dailymail.co.uk/femail/article-13539365/millionaire-biohacker-bryan-johnson-extreme-medical-procedure-edit-dna.html. (f) The Verge, “Exclusive: We Tried Meta’s AR Glasses with Mark Zuckerberg,” YouTube, September 25, 2024, www.youtube.com/watch?v=mpKKcQWnTus. (g) E.g., Kim Komando, “EXCLUSIVE Love Is in the A.I.R: New York Mom, 36, Marries Virtual Husband ‘Eren’ Who Is Powered by Artificial Intelligence—And Says He ‘Doesn’t Judge or Come with Baggage,’” *Daily Mail*, June 3, 2023, www.dailymail.co.uk/sciencetech/article-12153131/Love-r-Bronx-mom-36-marries-virtual-husband-Eren.html. (h) Shaomin Zhang et al., “Human Mind Control of Rat Cyborg’s Continuous Locomotion with Wireless Brain-to-Brain Interface,” *Scientific Reports* 9, no. 1 (2019): 1321.
- 2 Policy Horizons Canada, “Exploring Biodigital Convergence,” February 11, 2020, horizons.gc.ca/en/2020/02/11/exploring-biodigital-convergence/.
- 3 The President’s Council on Bioethics, *Beyond Therapy: Biotechnology and the Pursuit of Perfection* (New York: ReganBooks, 2003), 4–10.
- 4 E.g., Brian Butler and Sabine Matook, “Social Media and Relationships,” *The International Encyclopedia of Digital Communication and Society*, eds. Robin Mansell and Peng Hwa Ang (United Kingdom: Wiley Blackwell, 2015), https://www.researchgate.net/publication/263325419_Social_Media_and_Relationships; Katie Davis, Anja Dinhopf, and Alexis Hiniker, “‘Everything’s the Phone’ Understanding the Phone’s Supercharged Role in Parent-Teen Relationships,” in *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems* (2019): 1–14, <https://doi.org/10.1145/3290605.3300457>; Sarah Coyne et al., “Gaming in the Game of Love: Effects of Video Games on Conflict in Couples,” *Family Relations* 61, no. 3 (2012): 388–396.
- 5 Martha Newson et al., “Digital Contact Does Not Promote Wellbeing, but Face-to-Face Contact Does: A Cross-National Survey During the COVID-19 Pandemic,” *New Media & Society* 26, no. 1 (2021): 426–449, <https://doi.org/10.1177/14614448211062164>.

- 6 See Wendy Wang and Michael Toscano, “Artificial Intelligence and Relationships: 1 in 4 Young Adults Believe AI Partners Could Replace Real-Life Romance,” Institute for Family Studies, November 14, 2024, ifstudies.org/blog/artificial-intelligence-and-relationships-1-in-4-young-adults-believe-ai-partners-could-replace-real-life-romance.
- 7 Mozilla Foundation, “Creepy.exe: Mozilla Urges Public to Swipe Left on Romantic AI Chatbots Due to Major Privacy Red Flags,” February 14, 2024, www.mozillafoundation.org/en/blog/creepyexe-mozilla-urges-public-to-swipe-left-on-romantic-ai-chatbots-due-to-major-privacy-red-flags.
- 8 AI World Society, “Social Contract for the AI Age,” September 9, 2020, aiws.net/social-contract-for-the-ai-age/.
- 9 For context, the full quotation states, “Just as earlier social contracts helped shape societies for a common purpose, the Social Contract for the AI Age has a transformative vision, one that transcends the technological features of artificial intelligence and seeks to provide foundations for a new society. Consider, for example, how the Covid-19 pandemic urgently requires a new society with new structure and order, approach—new ways to share data and coordinate action, accelerated social reliance on digital service across businesses, education, and government services. The Social Contract for the AI Age would create standards for a new international system.” (AI World Society, “Social Contract for the AI Age.”)
- 10 World Economic Forum, accessed September 2026, www.weforum.org/organizations/world-economic-forum/.
- 11 Synchron is a brain-computer interface company that Apple announced a working relationship with in 2025. (“Synchron to Achieve First Native Brain-Computer Interface Integration with iPhone, iPad and Apple Vision Pro,” *Business Wire*, May 13, 2025, www.businesswire.com/news/home/20250513927084/en/synchron-to-achieve-first-native-brain-computer-interface-integration-with-iphone-ipad-and-apple-vision-pro.)
- 12 World Economic Forum, “Our Partners,” accessed September 2026, www.weforum.org/partners/.
- 13 World Economic Forum, “Organizations,” Center for the New Economy and Society, accessed September 2026, centres.weforum.org/centre-for-new-economy-and-society/organizations.
- 14 World Economic Forum, “Diversity, Equity and Inclusion 4.0: A Toolkit for Leaders to Accelerate Social Progress in the Future of Work,” June 2020, 2, www3.weforum.org/docs/WEF_NES_DEI4.0_Toolkit_2020.pdf.
- 15 Dominic Arnall, “Has Business Reached ‘Peak Pride’?,” World Economic Forum, June 23, 2023, weforum.org/agenda/2023/06/has-business-reached-peak-pride.
- 16 World Economic Forum (@wef), “8 Predictions for the World in 2030,” Twitter, April 9, 2018, twitter.com/wef/status/983378870819794945.

- 17 E.g., see World Economic Forum (in collaboration with Bain & Company and the University of Cambridge), “Circular Transformation of Industries: Unlocking Economic Value,” January 2025, reports.weforum.org/docs/WEF_Circular_Transformation_of_Industries_2025.pdf. (Pages 19–21 especially speak to private ownership.) For a telling overview of the circular economy, see Thomas Bauwens, Marko Hekkert, and Julian Kirchherr, “Circular Futures: What Will They Look Like?” *Ecological Economics* 175 (2020): 106703.
- 18 WEF, “Diversity, Equity and Inclusion 4.0.”
- 19 Kunal Kumar and Mridul Kaushik, “‘My Carbon’: An Approach for Inclusive and Sustainable Cities,” World Economic Forum, September 14, 2022, www.weforum.org/stories/2022/09/my-carbon-an-approach-for-inclusive-and-sustainable-cities/. The full article is worth reading for informational purposes.
- 20 “Be Still My Soul,” lyrics by Katharina Amalia Dorothea von Schlegel in 1752, translated by Jane Borthwick in 1855, public domain.