

WEEK 4 | A BIBLICAL THEOLOGY OF TECHNOLOGY, PT 3

TECHNOLOGY
IS LIKE PLAYING IN A SANDBOX
THAT SOMEONE ELSE MADE.
– Tony Reinke

Last week, we began to build a Biblical theology of technology by looking at God’s relationship to technology by analyzing the Tower of Babel narratives and a prophecy from the 54th chapter of Isaiah. A simply summarize of what we found would be this: God is absolutely, exhaustively, comprehensively sovereign over technology. He introduces new technologies to mankind at appropriate times in history, whether directly or through the creation of innovators and technologists. God creates the creators for their purpose. God is equally sovereign over how those technologies are used, whether for good or for evil. In other words, God’s relationship to technology is the same as His relationship to everything in this created universe: He is in a complete control of it.

Having seen God’s meticulous sovereignty over technology, we now want to ask ourselves a new question. Where does technology come from? What is its source or origin? Though we have already seen glimpses of the answer to this question, it is worth our time to explore it further.

EX NIHILO

The first words in Scripture are instructive: “In the beginning, God. . .” (Genesis 1:1). Moses, authoring a history or history itself, rightly begins with the One who stands outside of history. This God is timeless, existing before there was anything else, before there was matter or space or time. God, Paul tells us, “dwells in unapproachable light” (1 Timothy 6:16), not being bound by creation but transcendent. Moses’ words also remind us that God is independent, needing nothing apart from or outside of Himself to exist. He is the “Lord of heaven and earth” and “he himself gives to all mankind life and breath and everything” (Acts 17:24, 25). The sum of human activity adds absolutely nothing to God.

The next phrase is equally instructive. “In the beginning,” we are told, “God created the heavens and the earth.” Here in Genesis 1:1 we have a description of everything that is. There is God, and there is all that He has made; there is the Creator and His creation. We learn that God, though being entirely independent, self-existent and self-sufficient, chose to create. John Webster writes, “The existence of creation adds nothing to God, and in its absence God would be undiminished. .

. God is in himself infinitely happy, in need of nothing from the creature.”¹ God created because He wanted to, and for no other reason.

Since He was not creating to meet a need that had arisen in Him or a lack that needed addressing, we can only surmise that God created the heavens and the earth out of His own fullness and abundant, overflowing goodness. The material universe, according to Jonathan Edwards, is “an explosion of God’s glory.” In the act of creation, we see God’s “perfect goodness, beauty, and love radiate from God and draw creatures to ever increasingly share in the Godhead’s joy and delight.”² It is true that God created because He wanted to; it is equally true that He delighted in doing so. The picture we have in Genesis is of a benevolent God’s goodness overflowing into a good creation.

We also learn about the creation from these first words in Scripture. Unlike the Creator, the creation is bound by time and space; it has a beginning and, one might surmise, an end. It is dependent on Someone outside of itself for its existence. Importantly, the creation has a source—it *comes* from something. That “something,” though, is not something but Someone, the product not of matter but of a preexistent Mind. In other words, this creation can be said to be *ex nihilo*, from nothing. At the verbal command of the sovereign Lord, something snaps into existence where before there was nothing (“God said,” Genesis 1:3, 6, 9, 11, 14, 20, 24, 26). “Nothing” is a difficult concept to grasp, perhaps more than we realize. We cannot conceptualize *nothing*, for how can we imagine pure *absence*? Yet, this is what the Bible describes: God created the heavens and the earth from nothing.

Stephen Charnock writes, “A greater distance cannot be imagined than the distance between *nothing* and *something*; that which *hath no being* and that which *hath*; and a greater power cannot be imagined than that which brings something out of nothing.”³ We should not miss the significance of creation *ex nihilo* on our theology of technology. All technology, whether the wheel, computer chip, ICBM, or dishwasher, was created with materials that were created out of nothing by God. That is, all the technological material in our universe has God as its source.

To say all matter in the universe has God as its source does not go far enough in describing God’s role as Creator. The picture painted in the first verses of Genesis 1 is one of God carefully and intentionally crafting the universe according to His desire. The earth is “without form and void” (1:2), a picture of chaos and disorganization that God will exercise His authority over and reshape according to His purposes.

The rest of the chapter describes God first making three separations: between light and darkness (1:3-5), between the waters above and the waters below (1:6-8), and between the land and the sea

¹ John Webster, *God Without Measure: Working Papers in Christian Theology, Vol. 1: God and the Works of God* (New York: T&T Clark), 115-26.

² George M. Marsden, *Jonathan Edwards: A Life* (New Haven, CT: Yale University Press, 2003), 463.

³ Stephen Charnock, *Existence and Attributes of God*, vol. 1 (Grand Rapids, MI: Baker, 1996), 38.

(1:9-13). Each separation creates habitable spaces that God will fill. First, He fills the “expanse of the heavens” with lights to mark the passage of time (1:14-19). Second, He fills the sky and the seas with living creatures that they might “multiply and fill” their dwelling places (1:20-23). Third, God fills the land with “creatures according to their kind—livestock and creeping things and beasts,” culminating in His highest creation, mankind (1:24-27).

In His work of creation, God has brought order from chaos, organization from confusion, harmony from disarray.⁴ God fashioned this universe exactly according to His specifications, instituting the natural laws that govern this universe and apportioning matter and material where He intended it to be. He did not smatter the natural resources that would allow for technological breakthrough randomly, but exactly where He wanted them to be. That means that, even in His creation and ordering of the universe, God was weaving the contours of technological breakthroughs long before they would occur.

FALLEN POTENTIAL

God imbued the cosmos with incredible potential, carefully crafting a world meant to be studied and cultivated. Adam and Eve, as we saw last week, were given the task of exercising God’s dominion over the created world, subduing it and cultivating it to promote the flourishing of life. In Genesis 3, however, Adam and Eve rebelled against God and introduced sin into this world, an event that would have a dramatic impact on all subsequent events. The potential inherent in mankind made in the image of God, however, was not lost.

In Genesis 4, Adam and Eve give rise to the third human being, Cain. Cain’s name means “produced,” hinting at both his origins (he was the first human not created by Divine fiat) as well as foreshadowing what would be the legacy of his lineage. Cain, however, is fallen, tainted by sin. He is not only the first human being born, but the first to take a life (4:8), murdering his younger brother Abel.

Cain was a murderer. He was also an innovator. Cain was one of the earliest farmers—a “worker of the ground (Genesis 4:2)—probably learning rudimentary farming techniques from his father Adam as they coped with a cursed ground and the difficulty of growing food (Genesis 3:17-18). Undoubtedly, they would have needed to innovate to increase the food supply for a growing human population. In fact, Cain is the first to offer “the fruit of the ground” to Yahweh as a sacrifice (4:3), an indication that he had specialized in agricultural technology. We will return to the significance of Cain’s agricultural innovations later.

Cain’s story is an interesting one. God confronts Cain over the murder of his brother, cursing him “from the ground” and promising that he will be “a fugitive and a wanderer on the earth” (4:12). It’s a painful judgment. “My punishment is greater than I can bear!” he cries out to God.

⁴ See Isaiah’s description: “the Lord, who created the heavens (he is God!), who formed the earth and made it (he established it; he did not create it empty, he formed it to be inhabited!)” (Isaiah 45:18).

Incredibly, God shows Cain mercy. He marks Cain so that no one would attack him to avenge Abel's murder (4:15). Why does God do this? Why does God protect Cain rather than let the full consequences of his actions fall upon him? As becomes clear in the verses that follow, God was protecting Cain because Cain's descendants would be the fathers of technology.

After Cain is sent away from God's presence to the east, he settles in the land of Nod. There, he builds a city. This city, which Cain names Enoch after his firstborn son, is the first recorded human city, a significant advancement for mankind. Leaving the fields behind, Cain the innovator turned to central planning and designed the first urban environment.

Cities play a prominent role in the storyline of Scripture as well as in the history of the human race in general. Cities facilitate technological advancement. They allow for more efficient and economical food production and habitation, allowing time and resources to be allocated towards innovation. In sparing Cain, God is choosing to extend common grace to mankind by promoting a context for new technologies to develop.

TECH FATHERS

In the city, Cain's line prospers. His great-great-great grandson Lamech has three sons (with two wives)—Jabal, Jubal, and Tubal-Cain. You can hear the similar rhyme in their names, each a play on the Hebrew word meaning "to produce."⁵ These three would each be the fathers, the producers, of new industries and branches of technology:

1. Jabal is "the father of those who dwell in tents and have livestock" (4:20). Abel was a shepherd. Jabal is a keeper of various kinds of livestock. More than that, he is credited with inventing mobile housing, habitable textiles, and possibly—given the various forms of livestock—animal breeding (an early form of genetics).
2. Jubal is "the father of all those who play the lyre and the pipe" (4:21). Jubal was a musical genius who invents both wind and stringed instruments, giving birth to the music industry.
3. Tubal-Cain is "the forger of all instruments of bronze and iron" (4:22). Tubal-Cain creates new tools for farming and war, fashioning them from two metals (bronze and iron) that would come to mark distinct periods of human technological advancement. The tools he developed would have opened up new pathways of technological advancement as they amplified the native power of human beings in various arenas.

We can almost see all the fields— art, science, weaponry, husbandry, genetics, agriculture—and their concurrent innovations flowing from the techniques and technologies these men pioneered.

⁵ Kenneth A. Matthews, *Genesis 1-11:26*, vol. 1A, New American Commentary (Nashville, TN: Broadman and Holman, 1996), 287-88.

If technology can be viewed as a family tree (and it can be) where each technology builds on the discoveries and techniques that came before it, these men and their technologies are the progenitors of virtually all human technology, including that which exists in our time.

All of this technology, then, came about because God is merciful and gracious. God would have been perfectly just in killing Cain in judgment for his sin. Instead, God had mercy on Cain and worked through Cain and his descendants to bless the world with valuable technologies that would enable human flourishing:

The chain goes like this. The ground rejected Cain. God rejected Cain. But God did not kill Cain. Instead, God chose to channel his common grace through Cain's lineage to bless the world. A murderous rebel and his rogue family became God's choice for unleashing new innovation into the world. Whole industries were carried by Noah into a new world and passed down to us today.⁶

In many ways, the technological innovations of Jabal, Jubal, and Tubal-Cain—and so many innovations after them—mitigated the effects of the curse God placed on mankind and all creation. This can only be explained as an expression of mercy and grace pouring forth from a good God, the same God who created all things and called it good.

We should not, however, view technology as the means of reversing the curse altogether. Moses is careful to remind us that sin and evil is still very much a part of this technological world. Immediately following the description of these incredible advances in technology, Lamech, the father of these techno-fathers, sings the first recorded song in history. It's an ode to arrogance, violence, power, and wickedness. There is a lesson here for us: rapid technological advances never advance ethics at the same rate.⁷ As Tony Reinke writes, "Cain's family is a microcosm: its pattern of technical prowess and moral failure is that of humanity."⁸ Advances in ranching will lead to animal cruelty; advances in music and instrumentation will be used to promulgate vile and depraved lyrics; tool-making will lead to devastating weapons of war. Even the best technologies are prey to the sinful inclinations of man.

While Cain's offspring created these technologies and industries, it would not be Cain's offspring who perpetuated their use. That would be left to the line of Seth and his famous descendant, Noah, who would bring the knowledge and technologies produced in this age of innovation into the ark and introduce them to a new creation.

⁶ Reinke, *God, Technology, and the Christian Life*, 89.

⁷ Umberto Cassuto, *Commentary on the Book of Genesis: Part 1, From Adam to Noah* (Genesis I-VI 8), trans. Israel Abrahams (Jerusalem: Magnes Press, 1998), 244.

⁸ Reinke, *God, Technology, and the Christian Life*, 87.

What do we take away from all this? We must remember the lessons of Isaiah 54. God creates the smith, the technologist, the innovator. God protected Cain's line from destruction and created Jabal, Jubal, and Tubal-Cain to "produce" these various technologies.

If God relates to technology as the sovereign Lord, He is also the source of every innovator and every technology they produce. This takes on a very real sense as we examine early history of technological advancement seen in Genesis 4. We ought to recognize that this is no less true in our day. God created Elon Musk, Jack Dorsey, Mark Zuckerberg, Walt Disney, and all the other famous innovators that have had a profound impact on our world. Each of them was created by God and placed when and where they live (Acts 17:26) according to their purpose in God's eternal counsel. God is the Creator. Everything is from Him and for Him (Colossians 1:16).

TECH TREE

As we think about where our technologies come from, one thing is clear thus far—God creates the creators. He creates the innovators who develop new techniques and technologies. In that way, God providentially governs technological advances in history. What about the technologies themselves? What about the innovations? Where do they come from? For that, we turn back to the prophet Isaiah.

Isaiah 28:23-29 is instructive in explaining where innovations come from. The prophet writes:

- ²³ Give ear, and hear my voice;
give attention, and hear my speech.
- ²⁴ Does he who plows for sowing plow continually?
Does he continually open and harrow his ground?
- ²⁵ When he has leveled its surface,
does he not scatter dill, sow cumin,
and put in wheat in rows
and barley in its proper place,
and emmer as the border?
- ²⁶ For he is rightly instructed;
his God teaches him.
- ²⁷ Dill is not threshed with a threshing sledge,
nor is a cart wheel rolled over cumin,
but dill is beaten out with a stick,
and cumin with a rod.
- ²⁸ Does one crush grain for bread?
No, he does not thresh it forever;
when he drives his cart wheel over it
with his horses, he does not crush it.
- ²⁹ This also comes from the LORD of hosts;

he is wonderful in counsel
and excellent in wisdom.

Verse 23 is a call to attention. Isaiah is telling us, “Listen up! What I am about to say is important!” What is it that is so important Isaiah compound commands to pay attention? Simply put, Isaiah is going to expound on modern (at least, modern for Isaiah) farming techniques. On the surface it seems irrelevant—both to Isaiah’s audience facing the prospect of conquest by a foreign power, and to us in the modern age. As we will see, Isaiah’s message is one that ought to produce awe at God’s sovereignty and grace, and confidence in His control of history.

The first step in farming is to prepare the ground, to plow the ground, to “open and harrow” it so that it is ready to seed. Does the farmer do this continually? The implied answer is no. This leads to another question: how does the farmer know when the ground is ready? How does he know when it is properly plowed and ready to receive seed? The answer is not given; not yet, at least. Next, the farmer plants seed, but at random. There is intention and purpose here. Dill and cumin are scattered on a level surface, but wheat is best planted in rows, so the ground must be harrowed and organized. Barley, too, has its “proper place,” and emmer goes on the borders of the field. Each type of plant has a specific way and place of being planted.

This is a description of multi-cropping, an advanced agricultural technique meant to maximize yield in both type and quantity. How does the farmer know all this? Did he teach himself? No. Verse 26 gives us the answer: “For he is rightly instructed.” He is not the source of this knowledge and innovation. Who is, then? God. It is God who “teaches him.” The farmer learned his techniques from the Creator.

Before elaborating on this point, let’s see how the rest of the passage fleshes this out. In verses 27 and 28 Isaiah describes the harvesting techniques for three different types of crops: dill is “beaten out with a stick,” while cumin is beaten out “with a rod.” Wheat requires even more force and gets “a cart wheel rolled over” it. Each technique is matched to its appropriate crop to maximize yield. Again, how does the farmer know to do all this? “This also comes from Yahweh of hosts” (28:29). The lesson here is that God the Creator gets all the credit for the techniques and innovations that have allowed human life to flourish in this world. God creates the innovators and teaches the techniques of innovation. It all comes from God.

We ought to ask the obvious question here: does this principle really apply to more than basic agriculture, or building ziggurats or arks? Does God really teach the engineer working on microprocessors, or the programmer writing code for a social media platform? In response to these questions, Tony Reinke offers three answers we will evaluate in turn: 1) farming is our primary tech; 2) all tech has ancestors; 3) every innovation is patterned by agriculture.

- 1) Farming is our primary tech: Farming was a foundational technological development; in fact, the agricultural revolution is the first major revolution in human history that led to the drastic reordering of human society and lifestyle. Farming techniques enabled human

beings to transition from transient hunter-gatherer societies to more stable habitats based on agriculture. Food scarcity places natural limits on both population and the resources available for R&D.⁹ With the rise of farming techniques, a habitat could sustain a larger population which provided more minds and thus more potential for future innovation. Further, it allowed people to allocate more resources to innovation by removing the imminent threat of starvation. It was only once “food production had taken hold, a chain reaction of other technological-developments followed at an ever-quickenning speed. The transformation in food production was followed by the development of metallurgy, the invention of the wheel, the perfection of systems for writing and recording information, and other technical innovations which had powerful effects on human culture.”¹⁰ Farming allowed other technologies to arise. When God teaches the farmer, He is preparing the way for future innovation.

- 2) All tech has ancestors: Every technology has a family tree. As technology theorist W. Brian Arthur writes, any new innovation is the product of “combinatorial evolution,” that is, “fresh combinations of what already exists.”¹¹ Consider, for example, the iPhone. The iPhone is a combination of many prior technologies: the camera, typewriter, voice recorder, telephone, computer, flashlight, and more. Each of those, in turn, have their ancestors as well. Thus, when God positions Himself as the One who teaches the farmer, He is describing archetypal relationship that will apply to all later technologies. Everything the farmer knows, each innovation, “comes from God,” and this reality carries on down through the technological-family tree.

⁹ Yuval Noah Harris argues that the agricultural revolution was “history’s biggest fraud,” a Faustian bargain between mankind and certain grains and livestock. Harari argues that the agricultural revolution actually led to a less stable, less secure lifestyle than that of the hunter-gatherer. He notes that agrarian societies typically became highly stratified, with the farmers themselves experiencing poverty while their hard work maintained the lifestyle of a dominant ruling class; he also notes that dependence on just a couple crops limits a society’s ability to withstand poor harvests or other natural phenomenon. Despite his pessimistic outlook, even he must acknowledge the impact the agricultural revolution has had on humanity. He writes, “[The agricultural revolution] offered nothing for people as individuals. Yet it did bestow something on Homo sapiens as a species. Cultivating wheat provided much more food per unit territory, and thereby enable Homo sapiens to multiply exponentially” (Yuval Noah Harari, *Sapiens: A Brief History of Humankind* [New York: HarperCollins Publishers, 2015], 83). Harari rightly acknowledges that modern society was built on the foundations laid by the agricultural revolution. His analysis provides an interesting perspective, yet we must recognize that he writes as a secular historian and anthropologist presupposing the foundational assumptions of that worldview. Where we might see God’s providence in the agricultural revolution allowing image-bearers to multiply and fill the earth far more than they could have without it, he only sees the inexorable march of evolutionary biology. He has no conception of sin or the fall—factors that explain the drawbacks he notes.

¹⁰ Harvey Russell Bernard and Pertti J. Pelto, *Technology and Social Change* (New York: Macmillan, 1972), 317-18.

¹¹ W. Brian Arthur, *The Nature of Technology: What It Is and How It Evolves* (New York: Penguin, 2009), 18-24, 189, 207.

- 3) Every innovation is patterned by agriculture: Like agriculture, every innovation is “rooted in creation.”¹² No matter what field or specialty a person works in, it is God who teaches them in wisdom through His creation. John Calvin writes, “It is clear that there is no one to whom the Lord does not abundantly show His wisdom.”¹³ The further science and technology advance, the deeper into God’s creation they plunge, and the principal at play in Isaiah 28—that it is God who teaches the innovator—becomes all the more real and apparent. Calvin’s words on this text are worth reproducing at length:

A passing observation on the 26 verse may be made, and indeed ought to be made, that not only agriculture, but likewise all the arts which contribute to the advantage of mankind, are the gifts of God, and that all that belongs to skillful invention has been imparted by him to the minds of men. Men have no right to be proud on this account, or to arrogate to themselves the praise of invention, as we see that the ancients did, who, out of their ingratitude to God, ranked in the number of the gods those whom they considered to be the authors of any ingenious contrivance. Hence arose deification and that prodigious multitude of gods which the heathens framed in their own fancy. Hence arose the great Ceres [the god of agriculture], and Triptolemus [the god of sowing and milling grain], and Mercury [the god of importing and exporting], and innumerable others, celebrated by human tongues and by human writings. The Prophet shews that such arts ought to be ascribed to God, from whom they have been received, who alone is the inventor and teacher of them. If we ought to form such an opinion about agriculture and mechanical arts, what shall we think of the learned and exalted sciences, such as Medicine, Jurisprudence, Astronomy, Geometry, Logic, and such like? Shall we not much more consider them to have proceeded from God? Shall we not in them also behold and acknowledge his goodness, that his praise and glory may be celebrated both in the smallest and in the greatest affairs?¹⁴

Calvin recognizes that the ancient pagan cultures all understood better than the modern man that all knowledge, scientific or otherwise, is a gift from a transcendent deity; their error was in misdirecting this to false gods rather than the one true God. Calvin rightly understood that all science is the art of listening to the Creator and following “the patterns and possibilities God coded into creation.”¹⁵ Many of the fathers of the scientific

¹² Reinke, *God, Technology, and the Christian Life*, 100.

¹³ John Calvin, *Institutes of the Christian Religion*, ed. John T. McNeill, trans. Ford Lewis Battles (Louisville, KY: Westminster John Knox, 2011), 1.5.2.

¹⁴ John Calvin, *Commentary on the Book of the Prophet Isaiah*, trans. William Pringle (Edinburgh: Calvin Translation Society, 1853), 2:306.

¹⁵ Reinke, *God, Technology, and the Christian Life*, 102.

revolution pursued scientific inquiry *because* they believed God was speaking in His creation. Johannes Kepler writes,

I consider it a right, yes a duty, to search in a cautious manner for the numbers, sizes, and weights, the norms for everything He has created. For He Himself has let man take part in the knowledge of these things. . . . For these secrets are not of the kind whose research should be forbidden; rather, they are set before our eyes like a mirror so that by examining them we observe to some extent the goodness and wisdom of the Creator.

As Abraham Kuyper said, “God Himself called science into being as his creature.”¹⁶ He writes elsewhere, “Through endless types of experiments God has taught us all that we now know, and through all kinds of experiments our knowledge continues to be enriched.”¹⁷ All technical knowledge, all innovation, is taught by God through His creation. He coded into it only that which He desires us to find and empty—He sets the limits on human discovery and innovation. He makes the sandbox. The pulley, the wheel, the microchip—every technology existed in the mind of God before He created the world, and He has providentially created this world and guided history so that those innovations would come about.

God teaches the farmer—and, by extension, the programmer, the engineer, the chemist, and so forth. God creates the innovator, and He teaches the innovator. He is Lord of technology. It all comes through Him (Colossians 1:16). In the words of T.F. Torrance, the scientist becomes

The priest of creation, whose office it is to interpret the books of nature written by the finger of God, to unravel the universe in its marvelous patterns and symmetries, and to bring it all into orderly articulation in such a way that it fulfills its proper end as the vast theater of glory in which the Creator is worshipped and hymned and praised by his creatures.¹⁸

TAKEAWAYS

¹⁶ Abraham Kuyper, *Wisdom and Wonder: Common Grace in Science and Art* (Bellingham, WA: Lexham Press, 2015), 45-46.

¹⁷ Kuyper, *Common Grace*, 2:585-86

¹⁸ Thomas Forsyth Torrance, *The Ground and Grammar of Theology* (Charlottesville, VA: University Press of Virginia, 1980), 5-6.

- 1) *We only discover what God infused into creation:* God’s creation provides natural limitations as to what technologies are possible, no matter what creative and fanciful technological the human mind might imagine. Natural laws, chemical properties, types of natural resources and their availability—all these things provide constraints on what kinds of technologies mankind can create. As Kevin Kelly writes, “The technium can’t make all imaginable inventions or all possible ideas. Rather, the technium is limited in many directions by the constraints of matter and energy.”¹⁹
- 2) *God sends innovation through geniuses and by inevitability:* There are two theories that have arisen to answer the question of where technology comes from. One is akin to a “heroic” theory of invention, in which a unique genius is required to make a new discovery or unlock a new technique. The second is that, because new technologies stem from prior discoveries and technologies, their genesis is inevitable. Scripture seems to support both. In Cain’s offspring we see the heroic theory at work, in which uniquely gifted individuals develop new fields of innovation. In the farmer of Isaiah 28 we see the inevitability of technological progress; the farmer is not portrayed as a genius, but as one who learns from the creation God has made, something that happened simultaneously in different parts of the world.
- 3) *Innovation will often come through God rejectors:* One of the lessons from the story of Jabal, Jubal, and Tubal-Cain is that God works through unbelievers to produce new technologies that benefit mankind. These offspring of Cain are members of a lineage noteworthy for its rebellion against God (their father Lamech pridefully boasts of his sin); it is the line of Seth that is marked by a fear of God (Genesis 4:26). Furthermore, innovation is not salvific, and discovery will not lead a person to God. Often, those with the sharpest minds will concoct the most impressive and creative idols.
- 4) *Technological progress moves along within limits of possibility the Creator has instituted:* As noted above, God has installed natural barriers to technological innovation through scarcity of materials or the limits of natural laws and chemical properties. In this way, God governs the course of technological innovation. Reinke is worth quoting at length here:

This is where Darwinian evolutionists become very helpful, because while I deny that their theory is a fitting way to understand biological history, I think that evolutionists give us the right language to speak of technological evolution. Technologies build through combinatorial evolution. Old technologies merge into new technologies, but they also evolve according to the “constant capturing and harnessing of natural phenomena.” All human innovation helps exploit or resist natural laws. “A technology is always based on some phenomenon or truism of nature that

¹⁹ Kelly, *What Technology Wants*, 119.

can be exploited and used to a purpose.” It’s a rather obvious statement but truly remarkable in its implications when Arthur says, “Had we lived in a universe with different phenomena we would have had different technologies.”²⁰ The natural patterns of *this creation* led to *these technologies* we now have in hand.²¹

- 5) *Technology is from dust and returns to dust*: All technologies are made from the raw materials of this creation. They are not eternal; they are taken from the ground and, like us, will one day return to the ground from which they came. Thus, there is a certain futility in our technological innovation. As Solomon would say, “there is nothing new under the sun” (Ecclesiastes 1:9). Technology will not satisfy or fulfill us. It will not give our life meaning or transcendent purpose. It was never meant to. Technology, like all gifts, is meant to point us back to the good Giver and Creator who satisfies.
- 6) *Technology is God’s gracious gift to man to alleviate the effects of the curse*: After Adam sinned, God cursed the ground so that it would fight against Adam as he worked and toiled to derive a sustenance from it (Genesis 3:17-19). So much of man’s purpose in innovation is the desire to alleviate the curse. As Abraham Kuyper, “the impulse of virtually all human activity is born from the urge to combat sin or its effects.”²² Technology, then, is a manifestation of God’s immense mercy and grace, sparing mankind the full effects of the curse.

²⁰ Arthur, *Nature of Technology*, 22, 46, 172.

²¹ Reinke, *God, Technology, and the Christian Life*, 126-27.

²² Kuyper, *Common Grace*, 2:582.