Redeeming Technologies

On how Evangelicals embrace technological innovation

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Whither is God?" cries Nietzsche's "madman" in the marketplace. He answers his own question: "God is dead. God remains dead. And we have killed him." Today we might answer the question differently: "God is not dead. He's just online.

For the secularization hypothesis, the evidence of history is decidedly mixed. It is, in spite of Nietzsche's astute observation, not necessarily the case that the evolution of human societies in the modern era renders their faiths doubtful and then unnecessary and then irrelevant. Religious life languishes in some advanced societies and flourishes in others, and where it flourishes, it is often through the technification of God's work and God's service. At least in the case of Christianity, religious communities that grow and predominate tend to be those that adopt and leverage the technologies of their time. Call it survival of the savviest.

To be sure, technology can dull the spiritual senses, can dissipate the powers of attention on which prayer and meditation depend, or can clutter the mind with so many blazing distractions that stillness and self-reflection grow rare and then fabricated and commoditized. It is difficult to behold the mysterium tremendum in the starry midnight sky when your eyes are transfixed by the glowing screen. It is difficult to experience the immediacy of human relationships, the sacramental intimacy out of which religious communities large and small arise, when laptops and tablets and mobile devices interpose and interrupt every friendship.

However, people have found God and will continue to find God in, through, and in spite of our increasingly technological world. Writ small, new technologies can shape the fundamental ways in which we imagine, experience, and serve the divine. Writ large, religious movements often flow upon the tides of technological innovation. While religious history of course cannot be reduced to technology, it has in many ways been shaped by the history of technology.

The Christian theological tradition provides abundant resources not only for critiques of technology, but also for the positive appreciation of technology. It is this aspect of the Christian tradition that I will describe in two categories: first, how we can find God in the work of technology, in the vocation of the technologist and the purposes his technologies serve, and second, also in the works of technology, in technological innovations that can serve to glorify God or serve the kingdom of God.

Innovating in God's Image

A Technology is a tool or technique that increases our power to manipulate our environment. We tend to associate technology with "high-tech" devices — the productive yield of

modern scientific understanding. The laptops in our backpacks are, indisputably, artifacts of technology. But a backpack too is a kind of technology, developed in its modern form in the 1950s by a man named Dick Kelty. The pencil inside the backpack is a communications technology that has been available for several hundred years, but was refined especially by a Frenchman in Napoleon's army in 1795. The word "technology" itself goes back to the Greek *tekhnologia*, which refers to the study of the arts, tools, and techniques of craftsmen, artisans, and builders.

Some Christian Patristic traditions identify God himself as the first technologist, for the "garments of skin" or the clothing he fashioned for Adam and Eve on their departure from the Garden. This earliest technology reflects already, in Patristic commentary, technology's ambivalent nature: both natural and unnatural, a product of death and a preserver of life, an artificial shell or tool that serves to supply what was lacking in our natural state. It contains within itself both the sickness of the Fall and the cure the sickness requires. This duality continues in the first carpenter who saves the world, Noah, who fashions his ark, another unnatural covering made necessary by death and the curse, and yet also a divinely ordained vessel for protecting people in their vulnerability and need. From the story of Babel, we learn that architecture for the sake of self-glorification can be spiritually treacherous, but the building of the tabernacle and the temple shows us that architecture for the sake of glorifying God is an exercise of divinely given talents in ways that create sacred spaces for others to encounter God and to serve one another. In the Incarnation, Christ takes on our own "garment of skin," and the earliest Christian eschatologies envisioned the ultimate kingdom of God not as a return to a pre-technological garden but as an advance into the architecture of a perfectly constructed city, the New Jerusalem.

Jesus himself was called a tekton ([Mark 6:3](#)) and the son of a tekton ([Matthew 13:55](#)), a carpenter or a builder. A tekton employs techne — skill, art, technique, craftsmanship — in the manipulation of materials, principally wood. In the various technai (crafts or skills), which include not only woodworking but also smithing and weaving, materials are assembled and conjoined to create something new and useful. The work of techne thereby echoes the act of creation itself, and brings fulfillment and completion to the extent that, for instance, the shipbuilder is not fully himself and not fully expressing his art unless he is actually making ships, and unless in turn those ships are useful, improving the lives of others.

It was not long after the burgeoning Christian community began to spread that early Christian theologians began to reflect on the right roles of technicians and technologies. (I am indebted here to the work of my late professor and mentor, the philosopher Diogenes Allen, for drawing several of these threads together in his lectures and later in his book, Spiritual Theology [1997].) Basil the Great, addressing artisans in fourth-century Caesarea, taught them that their technai are essential in overcoming the effects of the Fall and restoring the divine likeness. Just as human beings were created in the image of God, Basil argued in his Hexaemeron, so they create in the image of God, as their work mirrors the divine creative act. The "productive" arts, such as architecture, especially reflect the creative intelligence of the "Master Craftsman" — so much that the pagan who heeds the theological instruction of the "school of creation" is prepared for the encounter with Christ the Logos.

The great monastic orders organized their communities around evolving communications and agricultural technologies, and the careful employment of those technologies in physical labor was an important part of monastic life. Hugh of St. Victor, a twelfth-century Augustinian canon, reflected on the basic study of God in a work called the Didascalicon. Like Basil, Hugh made the case very directly that technological improvement of the world is part of the restoration of human life and the created order.

Moreover, for Hugh and those who followed him, there are three proper categories of knowledge: the theoretical (mathematics, physics, and theology), the practical (politics, ethics, and economics), and the technological or mechanical (which includes such techne as fabric-making, armament, and medicine). A fourth category, logic, supports the other three by providing rules for speaking and argumentation. Since for Hugh as for Augustine all knowledge leads to God, the technological quest is an inquiry into the natural order God ordained, and thus into God himself. This means, as Allen explains, that "technology has the potential to be spiritual." While Hugh was certainly aware of classical authors who demeaned the mechanical crafts, he found a harmony of technological and scriptural understanding, treating technological knowledge as part of the redemptive process. Just as theoretical knowledge remedies the ignorance of humankind after the Fall, and practical knowledge protects against vice, so does technological knowledge mitigate physical weakness. Technology enhances our ability to know and worship God and helps to restore the Edenic state in which humankind is not subject to the natural world but the steward of it.

One of Hugh's followers at the Abbey of St. Victor, Godfrey, went further, noting that the mastery of the technological or mechanical arts requires the cultivation of mental disciplines that can help to direct our thoughts and control our passions. This would seem to run directly athwart a common criticism of much of our modern technology, which focuses on how the enjoyment of technologies all too often leads to distraction and dissipation. As Allen remarks, for Godfrey the mechanical arts and the right employment of technologies train the mind in the practices of attention and observation on which good prayer and good theology depend.

The thirteenth-century theologian Bonaventure noted the ways in which the practitioner of the mechanical arts ministers the grace of God to others. In the practice of his vocation, for instance, the architect is a vessel of grace to the family that lives in the home he designed. The mechanical arts are instruments of divine love as well as neighborly love. Yet it would fall to later generations to appreciate the significance of technological innovations specifically for the service of the Christian Church. Early technologies of communication and transportation — like quill and ink, parchment and paper, scrolls and codices, roads and sails and ships — were crucial for the spread of Christianity. If the early Christians had not been able to commit their memories to writing so soon after the life of Christ, much of the collective memory that now forms the teaching of the Church might have been lost. If they had not been able to share their stories and their teachings through written Gospels and Epistles, or had not been able to travel so quickly on Roman roads and Mediterranean ships, it is possible that Christianity might not have spread when and where it did, or might have been stamped out altogether by the Roman authorities.

We could go on. Monastic communities were among the first to use the waterwheel and several other means of mechanization, thereby lightening workloads and allowing monks and commoners to partake in less tedious and more meaningful forms of labor. The development and spread of farming technologies settled the formerly barbarian tribes around Rome and facilitated the spread of Christianity beyond the Roman Empire. The first significant use of Gutenberg's printing press was, of course, for the mass production of Bibles. New construction technologies permitted the raising of Europe's extraordinary cathedrals, and further development of transportation and navigation took the Christian gospel (and many aspects of the classical Judeo-Christian tradition) to the four corners of the earth. When Western missionaries arrived in the New World, they unintentionally brought novel diseases — but they also brought novel medicines and medical techniques, and they set up hospitals and medical charities, fortifying their credibility by offering not only spiritual consolation but healing and relief from suffering.

At the dawn of the twentieth century, the prophecy of Nietzsche's madman was still ringing in the ears of nervous European religionists. Yet the dynamism of religion in the twentieth century (and now also the twenty-first) closely parallels the dynamism of modern technological growth. Global missionary movements of the last century made use of an increasingly accessible and interconnected world. The Neo-Evangelical movement represented by the likes of Billy Graham exploded in popularity partly because of its early adoption of telecommunications technologies like radio and television. One need only visit a modern megachurch today to witness the clever employment of architecture and computers and media systems — or not visit a modern megachurch but enjoy its services by way of websites, podcasts, and apps on mobile devices. To put aside entirely the question of when growth is for the right reasons and when it is for the wrong ones, it appears to be those churches and church bodies that embrace technology and innovate in what we might now call the global religious marketplace that multiply the fastest. Sermons are live-streamed, conferences are simulcast, pastors are followed by hundreds of thousands on social media, and books are promoted on blogs and videos and chats. Even in the charitable goods and services they deliver, churches from the developed world today bring technological advances to the developing world, just as earlier generations of missionaries once brought innovations in medicine and agriculture. Churches today provide laptops to the underprivileged, create movies they market around the world, and deliver water-purification technologies to villages in Africa.

So when historians untangle why in the twentieth and twenty-first centuries Christianity has not waned so much as migrated southward and eastward, technology will play an important role in the story. First it was via planes, trains, and automobiles, and now it is through the Internet and social media that Christianity has spread, including to many countries where proselytizing is against the law. Travel and telecommunications technologies serve not only to cast a vision for Christian life but also to provide theological training for isolated pastors and Western funding for fledgling indigenous religious movements.

My own experience is illuminating in this respect. Near the end of my doctoral program in modern Western religion at Harvard University, I became convinced that the Internet was the most powerful platform available for global religious conversation. When I joined the team that

was building Patheos.com, we had a vision for creating online a marketplace of religious ideas, attracting the world's most talented writers to engage life's most important questions. About five years later, we have four million unique visitors monthly and a vibrant multi-religious conversation that attracts a constantly growing number of participants from all religious (and nonreligious) backgrounds and all parts of the planet — and we are still only beginning to scratch the surface of what new media technologies built upon a global telecommunications infrastructure could mean for faith in the modern world.

In summary, then, the work of the technologist is meaningful from a Christian theological perspective for several reasons. It reflects the creative and constructive ingenuity of God, for we are created to be creators in the image of our Creator. The Jewish and Christian scriptures affirm the original goodness of the natural world, and technology can serve to repair the broken world and restore humankind's capacity for stewardship. It helps us fulfill the creation mandate to subdue the earth and give it order. Technological development can be a form of neighborly love, as countless technologies — from the roofs above our heads to the vaccines that eliminate diseases to prosthetic limbs — serve directly to minimize human suffering and make the world more hospitable for human flourishing. From the perspective of the Christian theological tradition, the mental disciplines formed in the processes of technological innovation are infused with spiritual potential, cultivating the powers of attention and self-control that are intrinsic to prayer and obedience. And technologies can serve not only the interests of humankind generally but also the growth of the Body of Christ on earth. Thoughtful early adopters of emerging technologies have revitalized existing religious communities and planted more communities on fertile new soils.

We cannot travel from the garden to the heavenly city without crossing the tractor marks outside the walls.

Tools of Worship and Redemption

While I cannot count the number of times I have observed a mountain or lake or waterfall and felt transported by the dazzling fecundity of God's creative intelligence, I can tell you precisely the number of times — because the number is zero — I have experienced the same religious sense in the power of a mind-bending artifact of technology. We may be awed by works of technology in their own right, or even moved to praise their inventors, but we are rarely inspired by a work of technology to praise God. Why is this so?

A part of the answer, I suspect, is that Western audiences have been trained to see the successes of modern technology as further confirmations of the power and explanatory self-sufficiency of a scientific materialist worldview. Although Christian philosophy and theology formed the seedbed for the scientific revolution, providing the incentive as well as the intellectual framework for a morally and religiously meaningful exploration of the created order, we have grown accustomed to talking about modern science and technology as though they have largely left behind their Christian origins to become at best spiritually irrelevant and at worst implicitly atheistic.

If the work of the technologist can be redeemed in the light of God's providential purposes in history, can the same be said for specific works of technology? If the development and use of the cell phone could serve as a part of the restoration of the created order — for instance by strengthening friendships and families — could the cell phone itself become a pointer toward God? Although it may seem counterintuitive, there are good reasons to argue that the works of human hands speak more emphatically to God's uniquely powerful creativity than even the works of God's original creation. In fact, the ubiquitous technological artifacts of our own time can be to us what icons and crosses and church bells were to earlier generations of Christians: habitual reminders of the presence and the goodness of God, pointers toward God's invisible powers as well as his care and provision for humankind.

Consider again the early and medieval Christian theologians who explained to the craftsmen and craftswomen in their congregations that the works of their hands were simultaneously the works of God's hands because it was God who called and equipped them to their vocation in the mechanical arts and because their work was part of God's act of redemption. There is a more profound point to be made here as well. Specific technological objects point to the glory of a God who is capable not only of creating the thunderstorm but also of creating creatures with the powers of sensation and intellect and will to understand the thunderstorm and protect against it. If we are astonished by the marvelous interconnection of parts in the motions of a bird in flight, we should be still more astonished at the power and creativity that must have been required to fashion human beings with the liberty and the intelligence to craft the Concorde. Modern craftsmen can bridge great rivers and scale great mountains, and can even fabricate artificial rivers and mountains, but only the Master Craftsman is capable of making the men and women who can achieve these feats.

The argument requires a subtle shift of perspective, but the consequences are potentially far-reaching. If we can marvel not only at the ingenuity of Steve Jobs but even more so at the ingenuity of a God who created Steve Jobs and endowed him with talent and imagination and will, if we can marvel not only at an artificial heart and its capacity to ameliorate human suffering but even more so at the God who fashioned human beings like [Paul Winchell](#) with the powers of mind and will to devise an artificial heart, then we will see how we are surrounded by habitual reminders of God's character and majesty. Then we might learn to see watches and mobile phones, contact lenses and computers not as mere physical objects that are spiritually insignificant at best and evidence of scientific materialism at worst, but rather as the physical world's most powerful pointers toward the divine.

Technology, of course, also has its dark side. The same tools and techniques that are used to develop life-saving medicines can also be employed to develop biological weaponry. All human capacities, including the capacity to create technologies, can be used for good or ill. All tools, including technological tools, can be directed toward worthy or unworthy ends. Yet the fault lies neither with the tools nor with the One who gave the tool-maker the capacity to make the tools; it lies either with the tool-maker who devises the tool for evil or with the person who employs the tools toward evil. Even though we cannot thank God for sarin gas, we can thank God for giving us intelligence, creativity, and freedom, even if they are sometimes employed in the service of evil. Nevertheless, the sight of nefarious technologies, or the record of

technologies employed in nefarious ways, does not transport us to worship so much as it instructs us in the fallen nature of humankind and its need for redemption. Which is to say: we can learn from technology not only the invisible qualities of the Creator but also the need for a Savior.

This more nuanced understanding of technology in all its brilliant potential for good and ominous potential for evil, and in its reflection of the divine imago and participation in the redemption of all things, prompts us to ask pointed questions concerning future technological innovators. American evangelicals are wont to ask who will be the evangelical Spielberg. Perhaps we should ask who will be the evangelical Bill Gates or Steve Jobs or Mark Zuckerberg — or, better yet, who will not mimic the figures of the past but chart a new trajectory for redemptive technological innovation. How can Christians today stand at the forefront of emerging technologies, shaping material culture and human experience in profound ways, and then articulating their work with spiritual depth and theological sophistication? How can wearable technology, or augmented reality, or nanotechnology, or robotics, or quantum computing, or organ printing, or technologies still unimagined, be directed overtly to the alleviation of human suffering, the blossoming of human liberty, or the deepening of human worship? How can the church use Google Glass creatively, for instance, or how could the combination of Glass and augmented reality be employed in professing the gospel or serving the needy, in creating greater interreligious understanding or inviting outsiders into worship experiences, in touring the Holy Land or bringing the contemplative more deeply into the Biblical stories? Or how might genetically enhanced farming alleviate the world's hunger, or new frontiers of chemistry and materials science eliminate the problem of unclean drinking water? The task of the new generation of Christian technologists will be to ponder these questions and many others we cannot now anticipate.

Technologies can be deployed in the service of ends noble or ignoble. Technologists, like people of all professions, can pursue their calling in the service of ends selfish or unselfish. Grasping the dignity and even the reflected divinity of technological work, and finding the greater magnitude of divine creativity in the objects devised by the Creator's creatures, can only help us find the ends and purposes of God in the work and works of technology. The classical Judeo-Christian tradition offers abundant sources of inspiration on how we might make our societies more technological, more humane, and more religiously enriched all at once. The question is whether we have the time and the inclination to recover those sources, or whether we are too busy enjoying the fruits of technology to appreciate its roots and branches.