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**TECHNOLOGY AND CHRISTIAN SPIRITUALITY**

by

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## **PART I: INTRODUCTION**

When I tell people that I am writing my comprehensive paper on technology and spirituality, they often give me a puzzled look, as if to say, “What do those have to do with each other?” This project is an attempt to resolve a tension I have experienced in my own life and witnessed in the lives of so many people I know who have worked in the technology sector, specifically in information technology (computer software engineers, programmers, and other related jobs). It revolves around how to integrate our technological life with our spiritual life. The tension affects people involved in other industries as well, but I have chosen to focus on information technology since that is my background, and it does not have as long a history of being written about as some of the other technological fields.

My definition of “Christian spirituality” is captured well by Alister McGrath: “Christian spirituality concerns the quest for a fulfilled and authentic Christian existence, involving the bringing together of the fundamental ideas of Christianity and the whole experience of living on the basis and within the scope of the Christian faith.”<sup>1</sup> In the sense in which I am using it, our spirituality is shaped by and worked out in all dimensions of our living in the world, including our creation and use of technology.

For many Christians, there is a sense of guilt about working in the field of technology, and the all-consuming nature of the work leads to huge questions about priorities in life. Are we really making people’s lives any better by creating all this software that is obsolete within a couple of years? Are we not really just lining the pockets of company executives and shareholders, and perhaps even our own, by helping an industry which essentially forces people to upgrade to the latest greatest version in order not be left behind? Have we helped contribute to some of the ills of society, or personal frustrations, that computers are blamed for? Do our relationships suffer from the time we spend in front of the computer, even if a lot of that time is spent e-mailing friends all over the place? With all the

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<sup>1</sup> Alister McGrath, *Christian Spirituality* (Oxford: Blackwell Publishers, 1999), 13.

hours we must spend working and learning to keep up with the fast-paced changes in the technology industry, do we have time for the things that really matter in life, things of eternal value? Even those of us who have studied at Regent and strongly believe in the spirituality of everyday life still struggle with how that could possibly apply to the world of computer software.

The nature of the problem is so huge, and the tradition of thinking and writing *seriously* about it so new, that my attempt can only be a beginning. The tension still exists for me, even after all the reading and writing I have done. But my research and wrestling with this topic have advanced my understanding and ability to live with the tension, and I hope that it can be of some assistance to others who share my background and concerns.

I am indebted to many Regent faculty members who have contributed to my thinking about this topic: Loren Wilkinson (my primary advisor and a great inspiration for living well in God's creation), Craig Gay (who helped balance my pessimism about technology and whose seminar on Christianity and Technology helped me grapple with many of these authors), Eugene Peterson (who shaped my spirituality tremendously and introduced me to Albert Borgmann), James Houston (who was a spiritual mentor and showed me how even a spiritual sage can take delight in learning new things on the computer), Paul Stevens (who helped me integrate my technology marketplace experience with my faith), Rikk Watts (who shared his technological enthusiasm and biblical theology of technology with me), David Gill and Al Erisman (who launched me on this integrative quest with their course Business, Technology, and Christian Values), David Lyon and Ian Barns (who co-taught a summer course on Living with Technology), as well as countless fellow students with whom I have dialogued about these issues.

## **PART II: SUMMARY OF READING**

The comprehensive reading I did spans the past two centuries and crosses disciplinary boundaries, but is largely focused on the philosophy of technology.<sup>2</sup> This section comprises introductions to the authors and their works. I present these summaries in chronological order of their original date of publication,<sup>3</sup> in order to demonstrate the development of ideas. In the cases of authors whose works span multiple years, I have grouped their writings together in order of the year of earliest publication, so as to show how their contribution fits in as a whole in the history of the philosophy of technology.

### **Henry David Thoreau (1817-1862). *Walden or Life in the Woods* (1854)**

Thoreau is foundational for the present study, because he took a radical rejection approach to modern technology which has probably influenced, if not explicitly then at least subconsciously, the views of some of the more contemporary technology critics such as Wendell Berry, Neil Postman, and the self-proclaimed Neo-Luddites.<sup>4</sup> In any event, he is a classic example of the Romantic mindset towards technology, which is also evident in the works of the Romantic poets, Lord Byron, William Blake, and others. The Romantics, writing in the wake of the Industrial Revolution, were loath to accept the inroads of technology in their lives, and waxed poetic about the beauty of nature before machines came and ruined it. Thoreau falls squarely in this tradition.

The basis for *Walden* is a period of time when Thoreau performed an experiment and completely shunned the conveniences of modern technology. He built himself a rudimentary house on the shores of Walden Pond, on land owned by his friend Ralph Waldo Emerson, and lived there alone from July 4, 1845, to September 6, 1847. The book is essentially his journal of the time he spent in his seclusion, including the domestic details of his life (a ledger to show how little it cost him to build the cabin, notes about what he planted in his

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<sup>2</sup> My comprehensive reading list was drawn up by me and Loren Wilkinson with some input from Craig Gay.

<sup>3</sup> The bibliography gives details for the editions I used.

<sup>4</sup> Theodore Roszak, Kirkpatrick Sale, Scott Savage, and others.

garden, etc.), descriptions of the people who came to visit him there, and his keen observations of the natural world around him. Among his reflections are scattered critiques of the technology he chose to absent himself from, epitomized by the railroad: “That devilish Iron Horse, whose ear-rending neigh is heard throughout the town, has muddied the Boiling Spring with his foot.” (182)<sup>5</sup>

His chief aim in going to Walden Pond was to learn by personal experience how to live the good life. He did not trust the wisdom of his elders or the philosophers. “Here is life, an experiment to a great extent untried by me; but it does not avail me that they have tried it. If I have any experience which I think valuable, I am sure to reflect that this my Mentors said nothing about.” (9) A true philosopher, in Thoreau’s mind, does not merely think about, but lives the good life. “To be a philosopher is not merely to have subtle thoughts, nor even to found a school, but so to love wisdom as to live according to its dictates, a life of simplicity, independence, magnanimity, and trust. It is to solve some of the problems of life, not only theoretically, but practically.” (14) He believed that a good conscience and good character were more important than a comfortable life.

Thoreau could easily be called the patron saint of the voluntary simplicity movement which is gaining popularity today. He believed in only four minimal necessities for life. “The necessities of life for man in this climate may, accurately enough, be distributed under several heads of Food, Shelter, Clothing, and Fuel.” (12) He writes of the encumbrances of property: “I see young men, my townsmen, whose misfortune it is to have inherited farms, houses, barns, cattle, and farming tools; for these are more easily acquired than got rid of.” (4-5) Luxuries and comforts were to him superfluous and actually “hindrances to the elevation of mankind.” (13)

Another key theme of his was that labor enslaves. People work for money so they can live at a higher standard of living, but they are in bondage to their work. “The mass of

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<sup>5</sup> Citations from each book discussed herein will be shown as page numbers in parentheses.

men lead lives of quiet desperation....A stereotyped but unconscious despair is concealed even under what are called the games and amusements of mankind. There is no play in them, for this comes after work.” (8) Thoreau lived on as little as he did because he cherished the freedom it gave him, freedom from pointless toil, freedom to live well, to make friends, and to observe the world of nature.

One of the highlights of *Walden* is the way Thoreau gives exquisite descriptions of the simplest natural wonders he observes, things which we usually overlook in our hustle and bustle of modern life. His stories of the battle of the ants (215-18), his chasing of the loon (220-22), the patterns in the ice on the pond (231-22), and his survey of the bottom of the pond (269-276) are among the world’s masterpieces of naturalist writing. They also give clues to his philosophy of life: “It is remarkable how long men will believe in the bottomlessness of a pond without taking the trouble to sound it.” (269) He didn’t have much patience for people who believed in things without investigating for themselves. Consequently, he disdained organized religion.

Thoreau believed in the importance of self-knowledge as much as self-reliance. He felt that it is better to explore the inner landscape of your soul than to journey to distant lands. “Nay, be a Columbus to whole new continents and worlds within you, opening new channels, not of trade, but of thought.” (301) This self-exploration was facilitated by his eschewing of technological life.

He also believed that people could achieve their dreams, but only insofar as they chose to live simply as he did.

[I]f one advances confidently in the direction of his dreams, and endeavors to live the life which he has imagined, he will meet with a success unexpected in common hours....In proportion as he simplifies his life, the laws of the universe will appear less complex, and solitude will not be solitude, nor poverty poverty, nor weakness weakness. If you have built castles in the air, your work need not be lost; that is where they should be. Now put the foundations under them.” (303)

This belief was coupled with a strong sense of individualism. By far the most famous quote from *Walden* is: “If a man does not keep pace with his companions, perhaps it is because he hears a different drummer. Let him step to the music which he hears, however measured or far away.” (305)

*Thoreau on technology*

Thoreau is eminently quotable: “[M]en have become the tools of their tools.” (35)  
“Our inventions are wont to be pretty toys, which distract our attention from serious things.” (49)  
“We do not ride on the railroad; it rides upon us.” (87)

One of my favorite quotes from *Walden*, on the superfluity of technology, is this:  
“We are in great haste to construct a magnetic telegraph from Maine to Texas; but Maine and Texas, it may be, have nothing important to communicate....We are eager to tunnel under the Atlantic and bring the Old World some weeks nearer to the New; but perchance the first news that will leak through into the broad, flapping American ear will be that the Princess Adelaide has the whooping cough.”<sup>6</sup> (49-50)

Nothing receives more biting criticism than the train, the symbol for Thoreau of all that is useless and harmful about modern technology. He tells the story of racing on foot with a friend who takes the train, but the latter will have to count the time it takes him to work to earn the fare, and by that time Thoreau will have beat him to the destination. Says Thoreau: “[T]he swiftest traveler is he that goes afoot.” (50)

“[W]hen I hear the iron horse make the hills echo with his snort like thunder, shaking the earth with his feet, and breathing fire and smoke from his nostrils...it seems as if the earth had got a race now worthy to inhabit it.” (110) That is an example of Thoreau’s humorous sarcasm, which permeates his writing, as in the following: “[The trains’] whistle can be heard so far, that the farmers set their clocks by them, and thus one well-conducted institution regulates a whole country. Have not men improved somewhat in punctuality since

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<sup>6</sup> Neil Postman also liked this one. He quoted it in *Amusing Ourselves to Death* (New York: Penguin, 1985), 65.

the railroad was invented?” (111) Yes, they have. But in actuality Thoreau thinks it is horrible that modern life is so regulated by technology. He continues, “To do things ‘railroad fashion’ is now the byword; and it is worth the while to be warned so often and so sincerely by any power to get off its track.” (111)

Some quotes from the Introduction, which is Emerson’s eulogy to Thoreau,<sup>7</sup> serve to illustrate the character of this man: “He declined to give up his large ambition of knowledge and action for any narrow craft or profession, aiming at a much more comprehensive calling: the art of living well.” (xii) “He chose to be rich by making his wants few, and supplying them himself.” (xiii) “[N]ot a particle of respect had he to the opinions of any man or body of men, but homage solely to the truth itself.” (xxiv) “He grew to be revered and admired by his townsmen, who had at first known him only as an oddity.” (xiv)

Thoreau’s influence has been monumental through the years. Erazim Kohák, whom we will meet a little later, is among the many contemporary philosophers of technology who take a chapter out of Thoreau’s book.

**Romano Guardini (1885-1968). *Letters from Lake Como (1923-25)***

Romano Guardini is another writer who comes in the stream of the Romantics. He was “professor of Christian philosophy at the universities of Breslau, Berlin, Tübingen, and Munich. A leading promoter of the German Catholic Youth Movement, he wrote more than thirty books.”<sup>8</sup>

In this series of nine letters, written as if to a friend, Guardini laments the coming of modern technology. It erodes the countryside of Italy, which represents the old pretechnological lifestyle. His main critiques of technology are addressed in the seven central letters, each of which has a title that suggests its theme.

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<sup>7</sup> Originally published in *The Atlantic Monthly*, 1862.

<sup>8</sup> From the back cover of Guardini, *Letters from Lake Como*.

Technology results in a kind of artificiality of existence: The human world “seems from the outset to have about it something alien to nature, something unreal and artificial.”

(11) Guardini uses the example of a sailing ship versus an ocean liner. The former, while it is one step removed from nature, at least respects the laws of nature since it operates in harmony with the wind and the waves. But the ocean liner represents how our technology violates the natural. “We have now broken free from the living order of times: morning and evening, day and night, weekday and Sunday, changes of the moon and seasons. We live in an order of time that is our own making, fixed by clocks, work, and pastimes. The sphere in which we live is becoming more and more artificial, less and less human, more and more...barbarian. The profound sadness of this whole process lies over Italy.” (17)

Technology brings abstraction which removes us from the immediacy of nature and eliminates the particular in favor of the universal. “[T]hings are no longer directly detected, seen, grasped, formed, or enjoyed; rather, they are mediated by signs and substitutes....[W]e want to move away from the particulars that occupy us to what is structured, so that we may...master the whole of the reality around us.” (20) “What concepts do for knowledge... machines do for action. Machines...lay hold of many things in such a way as to disregard their individual features and to treat them as though they were all the same.” (23-24)

Technology leads to a surfeit of consciousness, meaning that we become so extremely aware of things and people (through methods such as statistics, psychology, and news media) that we do not give them the space they need to live. What we see developing is “a global consciousness.” (27) “Nothing happens anymore without being noticed.” (29) But “life needs the protection of nonawareness....[W]e cannot perform an intellectual act and at the same time be aware of it. We can only look back on it when it is completed. If we try to achieve awareness of it when we are doing it, we can do so only by always interrupting it and thus hovering between the action and knowledge of it.” (31) In the same way that plants grow only when their roots are enshrouded in darkness, “life must be grounded in what is not conscious and from that root emerge into the brightness of consciousness.” (32)

Technology encourages a surveying approach (breadth-first) to knowledge whereby boundaries are approached and butted up against, instead of a plumbing approach (depth-first) which explores the spiritual dimension that can never be exhausted.

Technology aims at mastery, which ignores the natural course of life and nature and eradicates true culture. The form of knowledge used by cultivators of land is a gentle mastery that follows the natural contours of the land. “The other form of knowledge and its mastery is very different. [It] does not inspect; it analyzes. It does not construct a picture of the world, but a formula. Its desire is to achieve power so as to bring force to bear on things....[T]he basis and character of its dominion [is] arbitrary compulsion devoid of all respect.” (44) “Machines are an iron formula that directs the material to the desired end.” (46) This anticipates the “challenging-forth” of nature into “standing-reserve” that Heidegger will speak of later (see below, p. 23). Even time and space are not respected. “Time and space...are mastered by means of communications.” (46)

Technology facilitates population growth and abandons art in the interest of making products for the masses. Standardization undercuts artistic creativity and quality. “Numerical growth does not proportionately increase creative depth. Less numerous peoples in antiquity and the Middle Ages had more concentrated creative force than larger peoples today.” (53) “Everything is mass produced, nothing individual.” (58) Mass culture is destroying our inherited high culture and ruining the rhythm of life. Works of art are “made showy and trashy.” (60) “Working days and Sundays merge into one another.” (59)

Technology results in the dissolution of the organic. In the past, people used tools, but kept them close to nature. Now a boundary has been crossed. “Individual forces such as steam, electricity, and chemical energy have been taken out of their natural context.” (71) What has arisen is “a new and specifically mechanical desire.” (72) Our age “seems to be governed by a different basic attitude, by the desire to set goals independently of organic

connections and on the basis of rationally emerging forces that are mechanically put in the service of this desire and its goals.” (75)

The answer, says Guardini, is not to retreat into romanticism and go back to nature, but to bring technology and the chaos it creates under human control. “We must not oppose what is new and try to preserve a beautiful world that is inevitably perishing. Nor should we try to build a new world of the creative imagination that will show none of the damage of what is actually evolving. Rather, we must transform what is coming to be. But we can do this only if we honestly say yes to it and yet with incorruptible hearts remain aware of all that is destructive and nonhuman in it.” (80-81)

He sees Christianity as part of the problem but also as intimating hope for a solution. “It is Christianity that has made possible science and technology and all that results from them. Only those who had been influenced by the immediacy of the redeemed soul to God and the dignity of the regenerate, so that they were aware of being different from the world around them, could have broken free from the tie to nature in the way that this has been done in the age of technology.” (81-2) But there were unexpected consequences. The forces of technology created by human hands have broken free from the hands that created them. We need to gain mastery over technology, as opposed to mastery over nature. “What we need is not less technology but more. Or, more accurately, we need stronger, more considered, more human technology.” (83) He proposes that a “new humanity must emerge of more profound intelligence, new freedom, new inwardness, new form” to “create a ‘world’ again” – a new order, a new cosmos, as in the days when we were confronted with the task to “Fill the earth and subdue it” and “shape chaos into a human world.” (83-84) He says that “true education...rooted in being, not in knowledge” (88) is the path to this new humanity, though we might achieve it only in eternity.<sup>9</sup>

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<sup>9</sup> Unfortunately at this point Guardini drifts into the idea of a Germanic essence, embodied in the German youth movement of his day, seeming to confuse that with the new humanity that Christian theology hopes for. But he was, after all, living in pre-Hitler Germany, and was probably shaped by the ideologies growing up around him.

So here again, we find in Guardini an idea that Heidegger would later articulate, that the seeds of salvation from the destructive force of technology lie not in rejecting technology but within the very realm of technology itself (see below, p. 25). Like Heidegger, Guardini thinks it must involve art. According to him, there are evidences everywhere that we are capable, even on the very verge, of achieving an artistic form for shaping technology such that it is truly expressive of our humanity. (92-93) Mastering chaos will necessarily involve placing ourselves at God's disposal, and operating with his freedom and power. "I believe that God is at work. History is going forward in the depths, and we must be ready to play our part, trusting in what God is doing and in the forces that he has made to stir within us." (96)

The book ends with an address, "The Machine and Humanity," which Guardini delivered at the Munich College of Technology. Some key ideas he presents there are: 1) machines make it possible for us to relate to the world as a whole – "the I-world relation" (104); 2) power from knowledge and machines must be used responsibly; and 3) we must make meaningful use of the freedom that is gained from technology. He ends with some cautions about the dangers arising out of the power of technology. People groups use it to subjugate each other. (106) Machines allow us to cross boundaries of personal restraint, threatening the essence of our humanity. (107) Technology can increase human vice and corruption. (108) The objectivity attending the use of technology has the potential to suppress our emotions. (109) And finally, technology can diminish religious sensitivity. "The ongoing intensification of science and technology, with all that this means in economic life, communications, and public consciousness, seems to be a hindrance to our ability to have immediate religious experience or to our receptivity to religious motivation." (110-111)

Guardini teaches us that, though there is reason to be pessimistic about the future of humanity in the servitude to technology, there is no going back. Technology is here to stay, and our best strategy is to learn to master it, in conjunction with "the forces [God] has made to stir within us." (96)

**C. S. Lewis (1898-1963). *That Hideous Strength* (1945)**

C. S. Lewis was by no means anti-technology. He believed that advances in science and technology were neutral as means to ends, that they could be used both “to cure, and to produce, more diseases...to alleviate, and to inflict, more pains, to husband, or to waste, the resources of the planet more extensively. We can become either more beneficent or more mischievous. My guess is we shall do both; mending one thing and marring another, removing old miseries and producing new ones, safeguarding ourselves here and endangering ourselves there.”<sup>10</sup>

*That Hideous Strength*, the third installment in Lewis’s space trilogy (after *Out of the Silent Planet* and *Perelandra*), is a dystopian tale of what can happen when modern technology comes under the control of the forces of evil. Like much science fiction of the early modern age, it addresses the potential for abuse of the power inherent in scientific knowledge and technology. Many of Lewis’s views of the dangers of modern technology were shaped by his experiences of war; indeed, *That Hideous Strength* was written as World War II was coming to a close. It can probably be read as a commentary on the twisted scientific philosophy of the Nazis.

The story is about a man and his wife, Mark and Jane Studdock, who are pitted against each other by their seemingly accidental embroilments on either side of an organization called the N.I.C.E., the National Institute of Co-ordinated Experiments,<sup>11</sup> which gradually insinuates itself into their peaceful college town of Edgestow. The goal of the N.I.C.E. was ostensibly “to get science applied to social problems and backed by the whole force of the state.” (38) But the N.I.C.E. was not at all nice; once you got involved with it, you couldn’t get out alive. The evil scientists at the N.I.C.E. were trying to achieve a society

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<sup>10</sup> C. S. Lewis, “Is Progress Possible? Willing Slaves of the Welfare State” in *God in the Dock* (Grand Rapids, MI: Eerdmans, 1970), 312.

<sup>11</sup> Amusingly, there is a real modern day N.I.C.E. in England, the National Institute for Clinical Excellence <<http://www.nice.org.uk>>, which, according to one critic, is causing Britain’s national health service to “become the epitome of the sort of constipated, centralised, bureaucratic nightmare inevitably created by authoritarian socialism.” (*Number Watch: Number of the Month*, June 2002, <<http://www.numberwatch.co.uk/2002%20June.htm>>).

that transcended human life altogether. Their gruesome experiments with the severed head of an executed criminal, in an attempt to bring it back to “life” through technological means, are at the center of an “inner circle” that Mark wants desperately to be accepted into. Jane, on the other hand, has the ability to see in her dreams the reality of what is going on at the N.I.C.E. She fortunately falls in with the small, but faithful, opposition group at St. Anne’s, under the directorship of the Pendragon, a.k.a. Ransom (protagonist of the previous two books in the trilogy). She struggles with whether to trust these people versus her loyalty to her husband, but ultimately decides to throw her lot in with the only people she is really safe with. Mark also begins to see the light and wishes to escape from the clutches of the N.I.C.E., but he cannot do it on his own. In the end, good triumphs over evil, with the help of Merlin unearthed from his crypt. Mark and Jane are reunited, and all is well with the succession of Pendragons, so Ransom can depart this world.

The book is a working-out of all kinds of other pet ideas of Lewis’s, from his belief that women should be obedient to their husbands, to his love of Medieval legend. It probably bears some relation to Lewis’s own frustrations at being excluded from the inner circles at Oxford and Cambridge. It is also fundamentally an exploration of the importance of choosing good over evil. “[I]t is of such immense importance to each of us to choose the right side. If you try to be neutral you become simply a pawn.” (41) But it remains one of the classic works in the tradition of Mary Shelley’s *Frankenstein* – science fiction that cautions about the possible dangers from the misuse of modern technology.

**Abraham Joshua Heschel (1907-1972). *The Sabbath* (1951)**

Noted philosopher and theologian Abraham Joshua Heschel brings a Jewish perspective to the discussion. Heschel was the descendant of a long line of Hassidic rabbis, and was trained to follow in their footsteps. However, his life would take a different turn, and he would become rabbi to the wider world, including many Christians who are deeply influenced by his thought. After obtaining his doctorate at the University of Berlin, Heschel

was selected by Martin Buber as his successor at the Judisches Lehrhaus in Frankfurt. Expelled from Germany by the Nazis, he arrived in the United States as a refugee. He taught briefly at Hebrew Union College and served on the faculty of the Jewish Theological Seminary from 1946 until his death. Among his books, the most widely read is probably his short but weighty classic of Jewish spirituality, *The Sabbath*.

Heschel was involved in the environmental and civil rights movements in America. His Jewish philosophy included a prophetic call to save the earth from destruction. He advocated cultivating a Sabbath consciousness in order to protect the planet.<sup>12</sup>

In *The Sabbath*, he applies these thoughts to life in a technological civilization. Heschel sets out to hallow time over space (in which category he includes *things*), and to show us how we can protect the sacredness of time. The world we live in militates against sacred time. “In technical civilization, we expend time to gain space.” (3) But “[t]he Bible is more concerned with time than with space.” (6) “Judaism is a *religion of time* aiming at the *sanctification of time*.” (8) The chief gift of Judaism to the world in this regard is its concept of the Sabbath.

Man has used his labor to subdue the earth, in obedience to the Biblical mandate. We have produced goods that enhance safety and increase comfort. However, we have become slaves to things, as we forfeit our time in order to gain more of them. Some have viewed technical civilization as a “essentially evil, to be rejected and condemned.” (27) However, “[t]he faith of the Jew is not a way out of this world, but a way of being within and above this world; not to reject but to surpass civilization. The Sabbath is the day on which we learn the art of *surpassing* civilization.” (27) The Sabbath is “a day on which we stop worshipping the idols of technical civilization.” (28) “The solution of mankind’s most vexing problem will not be found in renouncing technical civilization, but in attaining some degree of independence of it.” (28) Welcoming the Sabbath is the way to do that. “On the Sabbath we

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<sup>12</sup> Edward E. Kaplan, “Reverence and Responsibility: Abraham Joshua Heschel on Nature and the Self,” in Hava Tirosh-Samuelson, ed., *Judaism and Ecology* (Cambridge: Harvard University Press, 2002), 416-17.

live, as it were, *independent of technical civilization*: we abstain primarily from any activity that aims at remaking or reshaping the things of space.” (28-9)

The Sabbath gives an eternal perspective to the things of space with which we work. We are not to flee the latter; they are our useful tools. But our bride is the Sabbath. She is also a queen, who is to be honored and welcomed. “Unless one learns how to relish the taste of Sabbath while still in this world, unless one is initiated in the appreciation of eternal life, one will be unable to enjoy the taste of eternity in the world to come.” (74)

So, how do we recover the elusive time that we have exchanged for things? “We cannot solve the problem of time through the conquest of space....We can only solve the problem of time through sanctification of time....This is the task of men: to conquer space and sanctify time....All week long we are called upon to sanctify life through employing things in space. On the Sabbath it is given us to share in the holiness that is in the heart of time.” (101)

Heschel gives us one of the keys to living well in a technological society. I have quoted him so extensively because he has such a way with words and gives such a relevant reflection on the technology-spirituality dichotomy. I will expand further upon this concept of Sabbath as it relates to technology below in Part III.

**Jacques Ellul (1912-1994). *The Technological Society* (1954)**

Jacques Ellul was a French sociologist and lay leader in the Reformed Church of France. He was active in the French Resistance during the German occupation, and briefly held a city government position in Bordeaux after the war. He served for many years as Professor at the University of Bordeaux, teaching first law and then history and sociology. Ellul wrote more than 50 books across a wide spectrum of topics, at least 30 of which have been translated into English. One voluminous book of his, *The Technological Society*, has achieved the status of a classic in the critical literature on technology.

Ellul is often claimed as one of the forerunners of the Neo-Luddite movement, though he was not actually as opposed to technology as his most ardent followers assume. However, he does paint a very bleak picture of the effects of technological determinism on human society. *The Technological Society* is probably the most extremely pessimistic regarding technology of all the works we are considering.

Ellul describes the technological matrix we live in as an autonomous force which controls humans. This is his fundamental idea of technique. “The term *technique*, as I use it, does not mean machines, technology, or this or that procedure for attaining an end. In our technological society, *technique* is the *totality of methods rationally arrived at and having absolute efficiency* (for a given stage of development) in *every* field of human activity” (xxv, italics his). The chief characteristic of technique is that the selection of means is determined by a calculus of efficiency which can be scientifically measured. There is no room for subjectivity. The choice of means is left to the technical specialist who can prove the superiority of one means over another. (21) Ellul is not critiquing the use of technology or machines per se, but the whole framework within which they are forced upon us by deterministic criteria (similar to the Heideggerian idea of “Enframing,” described below, p. 24).

In his historical survey of the development of technique, Ellul points out that in the past, technique was limited to a narrow domain including “principally techniques of production, or war and hunting, or consumption (clothing, houses, etc.), and...magic.” (64) The emphasis was on application of existing means and techniques rather than on designing new ones. Technique was local, embedded in a culture, and thus its geographical spread was slow. It was also limited temporally (it developed slowly over centuries). Finally there was always the possibility of choice about whether or not to adopt technique. These two options were seen simultaneously in coexisting societies which were either active, “oriented toward the exploitation of the earth, toward war, conquest, and expansion” (76) or passive, “inwardly oriented...labor[ing] just enough to support themselves.” (76)

In modern society, the limitations have broken down, and technique holds sway over every sphere of life, spans the whole earth, and “is evolving with a rapidity disconcerting not only to the man in the street but to the technician himself.” (78) The characteristics of today’s technique are its *rationality*, “best exemplified in systematization, division of labor, creation of standards, production norms, and the like” (79); its *artificiality* – “[i]t destroys, eliminates, or subordinates the natural world, and does not allow this world to restore itself or even to enter into a symbiotic relation with it” (79); its *automatism* (methods are determined by technique itself, being selected based on efficiency alone; there is no room for individual choice or human involvement in the process); its *self-augmentation* – it “has arrived at such a point in its evolution that it is being transformed and is progressing almost without decisive intervention by man” (85); its *monism* – “the technical phenomenon, embracing all the separate techniques, forms a whole” (94); the *necessary linking together of techniques* – techniques spawn more techniques, for no machine or technique can exist in isolation (e.g., the rise of industry led to the development of cities, which brought with them the need for new methods of economic technique to regulate distribution, and so on...); its *universalism*, the notion that all over the world, regardless of the civilization, “there is a tendency to apply the same technical procedures” (116); and its *autonomy* – it is independent of restraint by economics, politics, the social situation (in fact, technique directs them), even morality or spiritual values. (133-4)

Ellul has three long chapters that discuss how technique affects the economy, the state, and even human behavior and thought. Economics itself is “the science [technique!] of efficient choices.”<sup>13</sup> (159) Economic techniques include organization of labor, statistics, mathematical modeling, public opinion polls, and the like. Of the three options for economic systems – corporatism, liberal interventionism, or a planned economy – Ellul says that the latter is the one imposed by economic technique. Economic technique creates “economic

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<sup>13</sup> Brackets in original.

man.” (218) “Work is the only thing that makes life worthwhile; it replaces God and the life of the spirit. More precisely, it identifies God with work: success becomes a blessing.” (220)

When state is married with technique, “the state as a whole becomes an enormous technical organism.” (252) The modern state involves all sorts of organizational techniques, military techniques, transportation and city planning, social assistance, and so on. Politicians are actually in the service of the technicians. A constitution makes little difference on the operation of a technological state, for it is the rule of efficiency that governs. “[T]echnique causes the state to become totalitarian, to absorb the citizens’ life completely.” (284) In fact, “[t]echnique cannot be otherwise than totalitarian.” (125)

Three elements of human life have been modified by technique: space (the machine has taken over the home), time (life is no longer regulated by biological needs but by abstract measurements of hours, minutes, and seconds), and motion (machines require operators to perform precise motions<sup>14</sup>).

Technique results in mass society (as noted also by Romano Guardini). Participation in mass society distracts the individual from his misery. The inability to adapt to mass society results in neurosis. A person has a choice: refuse to conform, and become neurotic; lose one’s means of subsistence and become a social outcast; or adapt to technique through psychic mutation. (334)

To this end, technique has developed ways to help people adjust to the unnatural conditions it creates. Work may no longer be as fatiguing as it was in earlier times, but it is meaningless, routine, and alienating. It requires the workers to be mentally absent. Thus techniques of psychology are applied to build morale and squeeze out more efficiency from workers. Other human techniques include universal education, labor unions (which, in Marxist terms, are a “hoax” – “the actual function of unionism is to support technical progress” (358)), vocational guidance (steering people into the jobs that they are most needed

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<sup>14</sup> A phenomenon known as “taylorization,” after Frederick W. Taylor who prescribed principles of scientific management for achieving greater productivity.

for, not necessarily most suited for), propaganda (using mass media to manipulate the masses), and amusement (television and radio to entertain people and distract them from their misery). Sports and medicine have also been technicized. And “technique [has] transformed man’s efforts toward the spiritual.” (418)

Ellul’s aim is not to propose a solution to all of this. He only intends to present the problem, as he sees it. However he does have some hints at how he believes a person can survive in the midst of the inevitable onward march of technique: “[E]ach of us, in his own life, must seek ways of resisting and transcending technological determinants. Each man must make this effort in every area of life, in his profession and in his social, religious, and family relationships.” (xxxii)

That’s fine for the individual, but as for society as a whole, the future looks grim. There is no way out. “Enclosed within his artificial creation, man finds that there is ‘no exit’; that he cannot pierce the shell of technology to find again the ancient milieu to which he was adapted for hundreds of thousands of years.” (428) Technique will continue to multiply and create more problems which will require further technique to solve them. Eventually, the only solution will be “a world-wide totalitarian dictatorship which will allow technique its full scope and at the same time resolve the concomitant difficulties.” (434)

In the end, Ellul winks at himself while expressing the futility of his endeavor. “All that must be the work of some miserable intellectual who balks at technical progress.” (436)

### **Jacques Ellul. *The Meaning of the City* (1970)**

*The Meaning of the City* is Ellul’s “theological counterpoint” to *The Technological Society*.<sup>15</sup> In it, the city represents everything technological that humans develop as a way of asserting their independence from God. From the time of Cain, who built a city he named after his son, people have been seeking a means of security apart from God, and this takes the form of the city throughout Scripture. Nimrod builds Shinar, which was throughout its

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<sup>15</sup> John Wilkinson, “Translator’s Introduction” in Jacques Ellul, *The Meaning of the City* (Carlisle, UK: Paternoster, 1970), viii.

history associated with destruction and piracy, and Resen, literally “bridle” or “bit” – “the first means invented by man to subdue natural force.” (14) There is of course the city of Babel, the center of Nimrod’s kingdom, which was expressly built to “make a name” for the people. (Gen 11:4) Ellul points out that “[t]o make a name for oneself has nothing to do with the modern expression referring to a reputation; it means becoming independent, and that is what their attempt at building meant. The people wanted to be definitively separated from God.” (16) Babylon, “the great city,” represents all the cities in the world, in their evil defiance against God. She takes the blame metaphorically for all cities, and God’s wrath is unleashed on her first. Nineveh, while it was “the city of repentance” (21), was also a bloody city (e.g., Nah 3:1). Whereas Babylon was the epitome of civilization, Nineveh embodies war. Civilization and war are “*the* two forms of man’s spirit of power.” (21)

The Israelites, too, engaged in this city-building activity, chiefly under Solomon, who employed slaves in his construction projects, and Rehoboam, who “built cities in order to become powerful, and once he was powerful, he rejected the Lord.” (35) Asa and Jehoshaphat were good kings and yet builders. In their hands, the city loses some of its power; this seems to “prefigure the ‘Everything is pure to those who are pure’ principle that Jesus taught.” (36)

But Israel is never guilty of this symbolic act of city-building in the same way as other nations are. God strips the act of the meaning imparted to it by humans. He “takes upon himself the act and gives it a new meaning.” (26) “God will save Zion and rebuild the cities of Judah.” (Ps 69:35)

When God addresses himself to the city as an entity, his words are always curses or condemnation. Jesus pronounces woes over three Judean cities: Chorazin, Bethsaida, and Capernaum. (Matt 11:20ff) “[I]f man is condemned with the city, it is because he has become a part of her. But God leaves a way of escape. What he wants is for man to separate himself from the city.” (63) There may come a time when we must reject complicity in the

God-defying works of technology. “When there is no longer any means of turning man’s work to the glory of his Creator, when there is no longer possible in Babel any mark of the revelation of God’s character in Jesus Christ, then life is no longer possible for the Christian. He must flee, cut himself off from the city.” (182) Regardless of the ideal of escape, we do live in cities, as captives, and must make the best of it. This is the gist of Jer 29:4ff. “But seek the welfare of the city where I have sent you into exile, and pray to the Lord on its behalf, for in its welfare will you find your welfare.” (72-73)

With David’s choice of Jerusalem, we come to a turning point. “Jerusalem is a holy city. But she is still a city....Her sins are those of other cities.” (97) However, Jerusalem’s real purpose is “to bear for the world her witness as an eschatological presence.” (108) Jerusalem is merely a prophecy of what is to come. Once what she prophesies comes, she must cease to exist. “For Jesus has fulfilled all that she was.” (135)

In the Old Testament, the multitudes in the city are condemned with the city. (124-25) But Jesus changes things. Judgment falls on the city, and for sure inhabitants will die, but that does not mean spiritual destruction. “[M]an is no longer entangled in his work, because Jesus Christ came for man as separate from his work.” (125) In Jerusalem, Jesus takes upon himself the condemnation of the world. “[B]y Jesus Christ’s death, Jerusalem literally becomes Babylon.” (140) Christ neutralized the city by his victory. (170)

The image of a city gets redeemed, for the end of human history is a city, but not one made by human hands. “Modern man is right...when he sees the future as belonging to the city. However, the city is not exactly as he foresees it. Whereas he sees it from a technical and sociological viewpoint, the true future of this world’s history and its final goal is in fact a city other than the imagined metropolis. We might call it the exact opposite: the new Jerusalem.” (158) “Man wanted to build a city from which God would be absent, but he never managed. God will make for him the perfect city, where he will be all in all.” (174)

Ellul reminds us not to be so heavenly minded that we are no earthly good: “The glorious vision of the city must not make us forget the material city in which we are living. It must not detract us from the material work we have to do. On the contrary, it is there to make that work worthwhile.” (188)

Were Ellul to have left us with only *The Technological Society*, he would have been a completely pessimistic voice. But fortunately *The Meaning of the City* gives us some handles of hope for redemption of technology. I will develop this idea further in Part III.

**Martin Heidegger (1889-1976). *The Question Concerning Technology* (1954)**

Any serious look at technology’s effects on human life must grapple with German philosopher Martin Heidegger. He is not an easy read by any means, but he has influenced many who followed him in the stream of philosophy of technology, in particular George Grant, Albert Borgmann, and Erazim Kohák, whom we will look at a bit later. Heidegger is most known for his studies on Being. The form of his writing is as important as its content. He makes great use of etymology, and the whole structure of his argument is organized by a series of questions that push the reader further and further towards a new understanding of technology. It is hard to escape the density of Heidegger’s style, because his use of language is so crucial to his argument, though I have tried in what follows to lend him some clarity.

In this essay, Heidegger sets about asking questions concerning technology in order to help us develop a free relationship to technology. A relationship is “free if it opens our human existence to the essence of technology.” (3) We are most enslaved to technology when we take the view that it is simply a neutral tool. “We shall never experience our relationship to the essence of technology so long as we merely conceive and push forward the technological, put up with it, or evade it. Everywhere we remain unfree and chained to technology, whether we passionately affirm or deny it. But we are delivered over to it in the worst possible way when we regard it as something neutral; for this conception of it...makes us utterly blind to the essence of technology.” (4) So then, Heidegger launches out to help us

discover this essence of technology, which he points out is not something technological itself (such as a machine), just as the essence of a tree is not itself a tree.

We think of technology as “a means to an end” and “a human activity.” (4) Those two statements constitute what Heidegger calls the “instrumental and anthropological definition of technology.” (5) It is a *correct* definition, but it is not *true*, in the sense of revealing the *essence* of technology. (6) In order to elucidate a better definition of technology, Heidegger launches investigations into the instrumental, which is based in causality. He discusses the four causes (material, formal, final, and efficient) in ancient philosophy. (6) “What we call cause...and the Romans call *causa* is called *aition* by the Greeks, that to which something else is indebted.” (7) From here it is a short step to seeing in causality the “presencing” of something, being responsible for its appearance, “starting something on its way into arrival,” (9) or “occasioning” its existence. Another Greek word he uses for this is *poiēsis*, or “bringing-forth” (10), which encompasses both artistic creation and *physis*, “the arising of something from out of itself” (10) as when a flower blossoms. Bringing-forth is a way of “unconcealment” (bringing something out of concealment), and as such is a “revealing” (11). This connects us to the Greek word *alētheia* (literally “unveiling” or “revealing”), which is translated “truth.” (12) So then, after this etymological romp, Heidegger has brought us to see that technology, which is characteristically instrumental, is in fact a way of revealing.

Next, Heidegger looks into the derivation of the word “technology” itself. It comes from the Greek *technē*, which is the word for the arts of the mind as well as the fine arts and crafts. It is closely related to bringing-forth, *poiēsis*. (13) *Technē* is a mode of revealing. (13) When it comes to modern technology, however, the kind of revealing is not a bringing-forth as in *poiēsis*, but rather a “challenging” or “setting-upon,” which demands of nature that it provide energy resources for our use. These resources which are ordered to stand there, stockpiled, for our use whenever we need them, he calls the “standing-reserve.” (17) In

summary thus far, there are two kinds of revealing: the revealing that brings forth (the good kind), and the revealing that challenges (the bad kind).

Here his argument takes a key turn. Man of course accomplishes this revealing which is a challenging-forth as standing-reserve. But he is not in control. Rather he himself is challenged or ordered to do it by a claim upon him from outside himself which Heidegger calls “Enframing” (German, *Ge-stell*). It is the very nature of modern technology which requires that it be used for this kind of challenging revealing (e.g., approaching nature as an object of research), as opposed to a bringing-forth. “Enframing means the gathering together of that setting-upon which sets upon man, i.e., challenges him forth, to reveal the real, in the mode of ordering, as standing-reserve.”<sup>16</sup> (20) Therefore, technology cannot be viewed as merely a means to an end. Modern science arose nearly two centuries before technology, and yet Heidegger argues that the essence of technology preceded modern science and drove its development. (21-22)

Now Heidegger returns to his original question as to man’s relationship with the essence of technology. Man is, in fact, not standing outside the essence of technology, able to observe it and relate to it objectively, but “man stands within the essential realm of Enframing.” (24) The thing which “gathers” and “sends,” which “starts man upon a way of revealing,” Heidegger calls “destining.” Man is, in a sense, destined to challenge nature, to objectify it. “[T]he destining of revealing holds complete sway over man.” (25)

The key to freedom from this destining is to think about the essence of technology and become aware of our relationship to it. “Enframing [is] a destining of revealing...a destining that in no way confines us to a stultified compulsion to push on blindly with technology or, what comes to the same thing, to rebel helplessly against it and curse it as the work of the devil. Quite to the contrary, when we once open ourselves expressly to the *essence* of technology, we find ourselves unexpectedly taken into a freeing claim.” (25-26)

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<sup>16</sup> A classic example of the utter unintelligibility of Heidegger if you read a sentence from him out of context.

This “destining of revealing” is inherently dangerous. The danger is that “in the midst of all that is correct the true will withdraw.” (26) This leads to the situation where man himself becomes merely standing-reserve: “[A]s soon as what is unconcealed no longer concerns man even as object, but does so, rather, exclusively as standing-reserve, and man in the midst of objectlessness is nothing but the orderer of the standing-reserve, then he comes to the very brink of a precipitous fall; that is, he comes to the point where he himself will have to be taken as standing-reserve.” (26-27) Man is so decisively caught up in Enframing that he isn’t even aware of it. The only form of revealing man can participate in is challenging. He is no longer capable of revealing in the way of *poiēsis*, bringing-forth. Thus Enframing blocks the unconcealing of truth. (27) “The threat to man does not come in the first instance from the potentially lethal machines and apparatus of technology. The actual threat has already affected man in his essence. The rule of Enframing threatens man with the possibility that it could be denied to him to enter into a more original revealing and hence to experience the call of a more primal truth.” (28)

Then Heidegger quotes German poet Hölderlin: “*But where danger is, grows / The saving power also.*” (28) In other words, “the essence of technology must harbor in itself the growth of the saving power.” (28) Here is the first hint that Enframing carries the seeds of its own revolution, so to speak.

The essence of something is that which endures. “*Only what is granted endures....*As the essence of technology, Enframing is that which endures.” (31, italics his) On the one hand, Enframing challenges man forth into revealing the created order as standing-reserve, and so endangers his bringing-forth of truth. On the other hand, Enframing is “the granting that lets man endure...that he may be the one who is needed and used for the safekeeping of the coming to presence of truth. Thus does the arising of the saving power appear.” (33) In other words, Enframing endangers the essence of man and indeed even truth itself, but it also gives man back his essence by granting him the calling of safeguarding truth. The way he can do this is through philosophizing. “Human activity can never directly counter this

danger....But human reflection can ponder the fact that all saving power must be of a higher essence than what is endangered, though at the same time kindred to it.” (33-34)

Going back to *technē*, Heidegger reminds us that at one point it included the *poiēsis* of the fine arts. “Once there was a time when the bringing-forth of the true into the beautiful was called *technē*. And the *poiēsis* of the fine arts also was called *technē*.” (34) Art “was a revealing that brought forth...and therefore belonged within *poiēsis*.” (34) Again a quote from Hölderlin carries the argument forward: “*poetically dwells man upon this earth*.” (34)

Heidegger tentatively suggests his solution to this whole problem of Enframing: “Could it be that the fine arts are called to poetic revealing? Could it be that...they for their part may expressly foster the growth of the saving power, may awaken and found anew our look into that which grants and our trust in it?...Because the essence of technology is nothing technological, essential reflection upon technology and decisive confrontation with it must happen in a realm that is, on the one hand, akin to the essence of technology and, on the other, fundamentally different from it. Such a realm is art.” (35)

Heidegger’s aim in the essay is to:

bear witness to the crisis that in our sheer preoccupation with technology we do not yet experience the coming to presence of technology, that in our sheer aesthetic-mindedness we no longer guard and preserve the coming to presence of art. Yet the more questioningly we ponder the essence of technology, the more mysterious the essence of art becomes. The closer we come to the danger, the more brightly do the ways into the saving power begin to shine and the more questioning we become. For questioning is the piety of thought. (35)

Though not all of us are called to be artists and poets, as we learn to think more like them – constantly questioning concerning technology – we will be able to avoid the dangers of Enframing and remain free from compulsion either towards or against technology.

**Martin Heidegger. “Memorial Address” in *Discourse on Thinking* (address given 1955, published 1959)**

Heidegger’s “Memorial Address” was presented at the celebration of the 175th birthday of the composer Conradin Kreutzer on October 30, 1955. It expresses some of his ideas about technology in layman’s terms, which is very rare for Heidegger.

In the address, Heidegger discusses the difference between calculative thinking and meditative thinking. He decries the problems which issue from our loss of the latter in favor of the former. Calculative thinking is that instrumental, scientific thinking which “computes ever new, ever more promising and at the same time more economical possibilities,” (46) whereas meditative thinking “contemplates the meaning which reigns in everything that is.” (46) Each kind of thinking is necessary in its own sphere, and we need both. Calculative thinking is practical, in touch with reality, useful for business affairs. But meditative thinking is what makes us truly human. It is the meditative spirit which enables humans to create genuine works of art, the flourishing of which “depend[s] upon its roots in a native soil.” (47) It is through meditation on “what lies close..., on this patch of home ground” (47) that we gain our rootedness, our *autochthony*. But “modern techniques of communication stimulate, assail, and drive man” away from “the tradition of his native world.” (48)

Calculative thought without meditation causes us to lose our rootedness in our native land and become entrapped in the forces of technology. We live in an atomic age, which gives us both the atomic bomb and peaceful uses for atomic energy. All of this is possible because of calculative thinking, but we do not stop to meditate on the meaning of the atomic age. This leaves the world “open to the attacks of calculative thought...Nature becomes a gigantic gasoline station, an energy source for modern technology and industry.” (50) Heidegger predicts that “technological advance will move faster and faster and can never be stopped. In all areas of his existence, man will be encircled ever more tightly by the forces of technology.” (51) Unless, that is, we recover meditative thinking and pit it against calculative thinking. (53)

The way forward towards freedom from bondage to technology lies in *releasement toward things*,<sup>17</sup> which is a way of saying at the same time both “yes” and “no” to them. “We can use technical devices, and yet with proper use also keep ourselves so free of them, that we may let go of them anytime. We can use technical devices as they ought to be used, and also let them alone as something which does not affect our inner and real core. We can affirm the unavoidable use of technical devices, and also deny them the right to dominate us, and so to warp, confuse, and lay waste our nature.” (54)

The meaning inherent in technology lies hidden while at the same time revealing itself, if we have eyes to see it. This is the mystery of technology. That frame of mind which makes us able to see the meaning hidden in technology Heidegger calls “*openness to the mystery*.” (55) “Releasement toward things and openness to the mystery belong together....They promise us a new ground and foundation upon which we can stand and endure in the world of technology without being imperiled by it.” (55)

**George Grant (1918-88). Selected essays in *Technology and Empire* (1969) and *Technology and Justice* (1986)**

Canadian political philosopher George Grant conveyed his thoughts on technology in a series of essays about issues that face us in the modern technological world: war, euthanasia, abortion, etc. A university professor of religion and philosophy, he was very interested in the way the technological mindset affects university education, marginalizing the humanities. As a Canadian, he felt resentful of the American empire that swept Canada up in its path, though he identified in some way with it as part of North America. He saw the will to technology as the chief culprit in the drive to empire expansion. As a Christian, he lamented the loss of a more contemplative approach to life that the growth of technology has brought.

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<sup>17</sup> German: *Gelassenheit*, a word which means “composure,” “calmness,” and “unconcern,” but also carries older connotations from the early German mystics (e.g., Meister Eckhart), of “letting the world go and giving oneself to God.” (54n4)

Grant asserts that North America's status as the most advanced technological civilization is more than an external achievement. It "moulds us in what we are...in our actions and thoughts and imaginings." (15) In the essay "In Defense of North America" (*Technology and Empire*), Grant looks at the background that led to the North American technological empire. Ancient Greek philosophy and Christianity were primal for the Europeans. "[T]he meeting of...contemplation and charity...formed the chief tension out of which Europe was shaped." (18) North America is different in that its beginnings were associated with conquest of the land by technology in the hands of Protestants, and this "primal," as he calls it, is what led North America to surpass her progenitor. There were, at the time, natural restraints that protected human beings from the psychical effects of technology. For under Calvinism, the conquest of nature had to include self-discipline, conquest over one's own body. Now that the Calvinist tethers are severed, we are left exposed to "the omni-presence of that practicality which trusts in technology to create the rationalised kingdom of man." (25) Europe now looks with dismay on what she hath wrought. "Members of the civilization which initiated modern technology often now express a fear of the Americanisation of Europe, and state that fear in their identification of the U.S. with the pure *will to technique*." (19, italics mine)

The will to technology has left us incapable of independent judgment, of making wise decisions about the technology we use. The very ethos that incubated the development of technology shaped and continues to shape our thoughts. "[T]he grave difficulty of thinking a position in which technique is beheld within a horizon greater than itself, stems from the very nature of our primal....[W]hen we seek to elucidate the standards of human good (or in contemporary language 'the values') by which particular techniques can be judged, we do so within modern ways of thought and belief." (32) We cannot step outside of the technological mindset, because we have lost the ability to be contemplative which our European forbears had, and to some extent have never lost (except now as they are being "Americanised"). "We live then in the most realised technological society which has yet been; one which is,

moreover, the chief imperial centre from which technique is spread around the world....Yet the very substance of our existing which has made us the leaders in technique, stands as a barrier to any thinking which might be able to comprehend technique from beyond its own dynamism.” (40)

In “Thinking About Technology” (*Technology and Justice*), Grant calls technology “the pervasive mode of being in our political and social lives” (17) and “the ontology of the age.” (32) He addresses specifically the use of computers, starting from the statement of one computer scientist who said, “The computer does not impose on us the ways it should be used.” (19) Grant argues that, in fact, the opposite is true. That statement “abstracts the computer from the destiny that was required for its making. Common sense may tell us that the computer is an instrument, but it is an instrument from within the destiny<sup>18</sup> which *does* ‘impose’ itself upon us, and therefore the computer *does* impose.” (23)

Computers impose on us in various ways. First, they always homogenize. “[T]he ways that computers can be used for storing and transmitting...increase the tempo of the homogenising processes. Abstracting facts so that they can be stored as information is achieved by classification, and it is the very nature of any classifying to homogenise.”<sup>19</sup> (23) Second, computers can only be built in societies which are friendly to large corporations and thus they are “instruments of...imperialism.” (25) They are “instruments which exclude certain forms of community and permit others.” (26) Furthermore, “the ways that computers have been and will be used cannot be detached from modern conceptions of justice, and...these conceptions of justice come forth from the very account of reasoning which led to the building of computers.” (27) These conceptions of justice are clouded by untrammelled human desire. “The modern conception of goodness does not include the assertion of a claim upon us which properly orders our desires in terms of owing, and which is itself the route and fulfilment for desire.” (30)

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<sup>18</sup> Cf. Heidegger’s use of “destining” above, p. 24.

<sup>19</sup> Cf. Guardini’s assertion that technology brings abstraction (above, p. 8).

We live now by Robert Oppenheimer's dictum: "when you see something that is technically sweet, you go ahead and do it."<sup>20</sup> (33) Grant prefers an alternative principle to live by: "just because something can be [done], it does not follow that it should be." (33-34)

Grant clearly was influenced by Heidegger. He views technology as a sort of mould that shapes our thinking about technology itself (similar to Heidegger's "Enframing"), and it is a destiny which imposes itself on us. The contemplation we have lost from our European heritage is akin to Heidegger's "meditative thinking." Grant's contribution is to bring all of this together with political philosophy. His is another largely negative voice, and his chief function in this stream of thinkers is to keep the discussion alive in a context where it is otherwise likely to be sidelined.

### **Samuel Florman (1925-). *The Existential Pleasures of Engineering* (1976)**

Samuel Florman is a civil engineer and chairman of a construction company in Scarsdale, New York. His many articles on the relationship between technology and culture have appeared in professional journals and popular magazines. In addition to his engineering degree from Dartmouth, he also holds an M.A. in English literature from Columbia. His writing demonstrates this blend of humanities and engineering in his background.<sup>21</sup>

Florman's *The Existential Pleasures of Engineering* is a good antidote to the pessimism of Ellul and Grant, and a grounding in practicality to balance the romantic thoughts of Thoreau (and to some extent Guardini). As a working engineer, Florman has gained a perspective that none of the pure philosophers shares.

Florman starts with a look at the history of the profession of engineering, from its golden age (1850-1950), when advances in technology were admired and praised, even

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<sup>20</sup> Oppenheimer's quote goes on to say "...and you argue about what to do about it only after you have had your technical success. That is the way it was with the atomic bomb." Oppenheimer said this during hearings before the Personnel Security Board in the investigation into his supposed communist associations. Not knowing the full context, it is hard for me to determine whether this was Oppenheimer defending his optimism about technology, or Oppenheimer in his later reflective stage regretting that his technological accomplishments led to the dropping of the bomb.

<sup>21</sup> Biographical information from the abstract accompanying Samuel C. Florman, "Technology and the Tragic View," in Albert H. Teich, ed., *Technology and the Future*, 7th ed. (New York: St. Martin's Press, 1997), 37.

almost idolized, to its decline and fall due to technological disasters. In the early days, “[t]he conventional wisdom was that technological progress brought with it real progress—good progress—for all of humanity, and that the men responsible for this progress had reason to consider themselves heroes.” (5-6) But then the engineers began to be troubled by the co-opting of engineering by the business world. A cleavage arose between the purist engineers and the ones who had sold out to industry. The 1950s launched a period of intense focus on the negative effects of technology. There was the Korean War, the first H-bomb test, the publication of Rachel Carson’s *Silent Spring*, the deadly London smog, Ralph Nader’s *Unsafe at Any Speed* (which blamed the automotive engineers for ignoring public safety issues), and the Vietnam War. There were fears of health hazards, nuclear holocaust, depletion of natural resources, and contamination of the atmosphere; also, people were angry about planned obsolescence. An antitechnology backlash began to brew.

People started “suggesting that most of our problems would go away if only engineers would become *more moral*.” (18) But, argues Florman, “if ever there was a group dedicated to—obsessed with—morality, conscience, and social responsibility, it has been the engineering profession.” (19) However, the engineers found that their good intentions were no match for “excesses of technological development.” (19) If they tried to draw attention to immoral practices in business, there was retribution, as there tends to be with all “whistle blowers.” Florman believes the only solution is to have government agencies do the regulating. (20) Furthermore, engineers cannot be blamed for society’s decisions. The public wasn’t interested in the environment in the 1960s. Instead, “the nation decided to pour billions of dollars into space exploration.” (36) Society was shortsighted.

In Part Two, Florman examines more closely the main claims of the antitechnology movement and gives a rebuttal. Antitechnologists speak of technology as an autonomous evil force. According to them, technology compels people to do work that is “tedious and degrading” (53) and to consume things they don’t want or need. It “creates an elite class of technocrats and so disenfranchises the masses.” (53) It separates people from their natural

environment. It provides technical diversions which destroy their existential sense of their own being. (54) “The antitechnologists repeatedly contrast our abysmal technocracy with three cultures that they consider preferable: the primitive tribe, the peasant community, and medieval society.” (54)

In refuting the antitechnologists’ position, Florman first admits that “many foolish things were said in praise of technology that should never have been said.” (57) But technology is not the evil force it is made out to be. People engage in technological activity because they choose to. “Man is by nature a technological animal; to be human is to be technological.” (58) The antitechnologists’ “idyllic descriptions of peasant life do not ring true.” (62) Furthermore, it simply is not true that the technologists are the ruling class who keep the masses ignorant. Anyone can walk into a bookstore and buy a children’s book which explains dozens of technological inventions from electricity to rockets with simple diagrams. (65)<sup>22</sup> In answer to the claim that technology is separating people from their natural habitat, Florman says people have the opportunity (thanks to technology) to get closer to nature, but they choose not to. The wealthy “seem to prefer penthouse apartments in New York” and the poor “tire of the loneliness and the hard physical labor that goes with rusticity, and succumb to the allure of the cities.” (66)<sup>23</sup>

The increasingly popular antitechnology doctrine is “a dangerous delusion.” (74) The antitechnologists are motivated by fear of the insatiability of human desire. (76-77) “[T]he vast majority of people in the world want to move forward, whatever the consequences.” (76) “[I]f large numbers of good people *did* begin to withdraw as recommended by the antitechnologists, [this] would only serve to make it easier for a demagogue to come to power.” (83)

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<sup>22</sup> Florman’s counterargument is weak here, because one reading of *The Way Things Work* (or even an adult book explaining technological inventions to laypeople) is not sufficient to actually use the technology in the role of decision-maker. The technology experts still have the upper hand.

<sup>23</sup> That is perhaps an over-simplistic explanation for what drives poorer people into cities. Government policies and big business put small farmers out of business, for example. See section on Wendell Berry below, p. 36.

Part Three is Florman's paean to engineering, focusing on the God-given urge to create that is in all of us, and suggesting a better way to view technology than what has been offered by some. "At the heart of engineering lies existential joy." (101) "[W]e cannot survive on meditation, poems and sunsets. We are restless. We have an irresistible urge to dip our hands into the stuff of the earth and to do something with it." (104) Florman sees Greek Platonism as one of the main sources of antimaterialism in our culture. The other is the New Testament (he says this with reference to only two verses, and with much hand-waving). "Also, the Christian attitude toward work is somewhat ambivalent. Man is instructed not to labor toward material goals, yet the Benedictines teach that idleness is the enemy of the soul. Often, indeed, the so-called Protestant work ethic is blamed for our worst technological excesses." (103)

We must look back further, to Homer and the Old Testament, to find a better existential model for engineering. Homer appreciated the material world and the art of manufacture. The Old Testament, too, views "man-made objects [as] the subject of wonder and delight." (110) According to the Old Testament view, humankind is "ordained to work, keeping always in mind the sanctity of the Sabbath." (112) The engineer, like Bezalel, is "filled...with the spirit of God, with skill, ability and knowledge in all kinds of crafts." (Ex. 31:3, NIV)

There is much existential gratification for the engineer. As creators by nature, humans desire to change the world. There are spiritual rewards in engineering. "The ultimate material expressions of religious faith are, of course, the medieval cathedrals." (124) There is the beauty of the machine, which is "a marvel of dynamic elegance." (132) "[T]he machine, rather than cutting [mankind] off from the wellsprings of beauty, opens before him new vistas of truth, splendor, and elegance. The beauty of the machine is pure, like mathematics. It is also, paradoxically, imbued with the vitality of humanity, since it is exclusively man-made." (135) Engineers are motivated by finding a creative solution with

practical applications. And they also derive supreme satisfaction from making a contribution to the welfare of society.

Florman proposes Sisyphus as a symbol of the modern engineer. “Of course we aim for more than rolling a stone up a hill. But we are beginning to realize that for mankind there will never be a time to rest at the top of the mountain....There will always be new burdens, new problems, new failures, new beginnings. And the glory of man is to respond to his harsh fate with zest and ever-renewed effort.” (117)

In a Postscript to the second edition, Florman gives a rebuttal to Schumacher’s *Small is Beautiful* (1973). Yes, technology should be *appropriate*, but since when is only small technology appropriate? Some problems by their very nature need large technology to solve them – public works, for example. A large scale return to a rural lifestyle would be ill-advised. “Such an experiment in self-reliance has been tried in our time by the Cambodian Communists, and what ensued was one of the great calamities of human history.” (158) The real reason underlying the denunciation of large technology is political – a fear of losing freedom of choice. But there is no evidence that large technological systems facilitate despotism. On the contrary, “freedom in the United States [is] protected and encouraged by strong central institutions...big government, big business, big labor unions, big political parties, and big volunteer organizations.” (162) The proponents of “small is beautiful” philosophy idealize small town life. But big cities nurture high culture, and “enhance small-town life, not only by providing a source of cultural enrichment, but also by acting as a safety valve—an alternative. People today can live in small communities because they choose to, not as in earlier times because they are trapped.” (163)

Florman summarizes what he calls the “engineering view,” which involves:

a commitment to science and to the values that science demands— independence and originality, dissent and freedom and tolerance; a comfortable familiarity with the forces that prevail in the physical universe; a belief in hard work, not for its own sake, but in the quest for knowledge and understanding and in the pursuit of excellence; a willingness to forgo perfection, recognizing that we have to get real and useful products ‘out the

door'; a willingness to accept responsibility, and risk failure; a resolve to be dependable; a commitment to social order, along with a strong affinity for democracy; a seriousness that we hope will not become glumness; a passion for creativity, a compulsion to tinker, and a zest for change. (183)

While Florman does have flaws and is somewhat biased by his love of technology, his book is a refreshing oasis in a desert of despondency.

**Wendell Berry (1934-). Selected essays in *The Unsettling of America* (1977), *Home Economics* (1987), and *What Are People For?* (1990)**

Wendell Berry is a Kentucky farmer, teacher, poet, and writer of essays and fiction. He is at home in the Christian tradition, and has a reverence for Scripture, though his faith is rooted more in evidence from below (family and community) than revelation from above.<sup>24</sup> Berry is a prophetic voice today, challenging the adoption of unnecessary technology. He writes predominantly about the effects of technology on agriculture, community, economy (mostly in the local sense), and academia. Berry chooses to reject much technology in his own life, living more in tune with the land. From this stance he can critique the modern world. He knows he is in a dwindling minority, but he cannot help sounding the alarm about the rapidly progressing loss of a mode of life he holds dear.

One of the major themes in Berry's essays is the importance of the small, local economy of the family farm. Its survival is threatened by the industrial economy of the nation (he writes from an American perspective). Our industrial society measures value in terms of price, and it fosters competition. Agribusiness farms grow ever larger, depending more and more on technology and cheaper products made elsewhere. They drive small farms out of business, destroying local communities in their wake.

In agriculture, competitiveness has been based throughout the industrial era on constantly accelerating technological change...and this has encouraged an ever-accelerating dependency on purchased products, products purchased ever father from home. Community, however, aspires toward stability.... [A] vital community draws its life, so far as possible, from local sources. It prefers to solve its problems, for example, by non-monetary exchanges of help, not by

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<sup>24</sup> Anne Husted Burleigh, "Wendell Berry's Community," *Crisis* 18, No. 1 (January, 2000): 28-33. Reprinted in *Catholic Educator's Resource Center*, <<http://www.catholiceducation.org/articles/arts/al0051.html>>.

buying things. A community cannot survive under the rule of competition. (“Economy and Pleasure” in *What Are People For?*, 134-35)

Berry rails against the exploitation and disappearance of the small, independent farmer. “[T]he class of independent small farmers who fought the war of independence has been exploited by, and recruited into, the industrial society until by now it is almost extinct....The only escape from this destiny of victimization has been to ‘succeed’ – that is, to ‘make it’ into the class of exploiters.” (“The Unsettling of America” in *The Unsettling of America*, 4-5)

Berry places a high value on work, particularly manual work close to the land. It is necessary for the survival of our planet and our species, and it is actually pleasurable. But in our modern world, we devalue work and try to escape it. We look forward to quitting time, weekends, vacation, and retirement. We find our pleasure through the entertainment industry. Berry urges us to recover the pleasure of work and of eating the fruits of our labor.

He also stresses God’s gift of the earth for usufruct, and our responsibility for its stewardship. Unfortunately, the organized Christian church has been much to blame for the neglect of the land, in contempt of Scripture. “The ecological teaching of the Bible is simply inescapable: God made the world because He wanted it made. He thinks the world is good, and He loves it....He has never revoked the conditions, bearing on His gift to us of the use of it, that oblige us to take excellent care of it.” (“God and Country” in *What Are People For?*, 98)<sup>25</sup> “Our responsibility...as stewards..., according to Revelation 4:11, is to safeguard God’s pleasure in His work.” (100) While it seems an uphill battle, Berry indicates that there is no other option for faithful Christians.

[I]f one wishes to save anything not protected by the present economy—topsoil, groves of old trees, the possibility of the goodness or health of anything, even the economic relevance of the biblical tradition—one is part of a remnant, and a dwindling remnant too, though not without hope, and not without the necessary instructions, the most pertinent of which, perhaps, is this, also from Revelation: “Be watchful, and strengthen the things which remain, that are ready to die.” (102)

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<sup>25</sup> All page numbers in this paragraph are from the same essay.

Underlying most of Berry's writing is his disdain for unnecessary technology, made most explicit in "Why I Am Not Going to Buy a Computer" and "Feminism, the Body, and the Machine" (both in *What Are People For?*). Just as small farmers can do with their hands and a team of horses what others think they need tractors and pesticides to do, Berry can do with a pencil and paper what others depend on computers for. He refuses to keep up with the Joneses. If some technology doesn't solve a problem better than the old tool did, and with fewer negative side effects, he will have none of it. "But a computer, I am told, ... will help you to write faster, easier, and more....Do I...want to write faster, easier, and more? No. My standards are not speed, ease, and quantity....I would like to be a *better* writer, and for that I need help from other humans, not a machine." ("Feminism...," 189-90)

Aiming only at monetary gain and leisure, technological progress has not served any higher purpose or solved any real problems, but rather it has done harm. It has not been worth the damage to social and ecological systems that it has caused. It has proliferated shoddy workmanship and dulled our minds. "After several generations of 'technological progress,' ...we have become a people who *cannot* think about anything important." ("Feminism...," 187) "The worst disease of the world now is probably the ideology of technological heroism, according to which more and more people willingly cause large-scale effects that they do not foresee and that they cannot control." ("Preserving Wildness," in *Home Economics*, 150)

A most sinister consequence of technological progress is:

the degradation and obsolescence of the body...a new version of an old dualism....[S]ince the beginning of the technological revolution, more and more people have looked upon the body, along with the rest of the natural creation, as intolerably imperfect by mechanical standards. They see the body as an encumbrance of the mind—the mind, that is, as reduced to a set of mechanical ideas that can be implemented in machines—and so they hate it and long to be free of it. (190-191)

One last reason why Berry does not want to use a computer (or other labor-saving technological devices) is that he does not want to deny himself "the *pleasure* of bodily

involvement in my work, for that pleasure seems to me to be the sign of an indispensable integrity.” (“Feminism...,” 192)

Berry is a significant counterpoint to Florman, and the dialogue continues. Berry tends towards the extreme in his rejection of computers. While I will argue later that periods of Sabbath can be a helpful corrective to technological saturation, that does not necessitate complete avoidance of modern technology at all times. But perhaps we need the Berrys of the world to show us how we can do without it some of the time.

**Robert Banks. *The Tyranny of Time* (1983)**

Robert Banks is director and dean of the Macquarie Christian Studies Institute in Sydney, Australia. Prior to that, he served as the executive director of the DePree Leadership Center at Fuller Theological Seminary. He is a familiar name in the area of everyday Christianity, and is co-author of several books with Regent College’s own Paul Stevens.

*The Tyranny of Time* is a popular book about the pressures of today’s fast-paced technological society on human life. American historian Arthur Schlesinger once said, “Nothing defines our age more than the furious and relentless increase in the rate of change.” (21) Banks seeks to give a Christian perspective on this situation and to show people how to break free from the scarcity-of-time mentality and enter a healthy rhythm of personal and social life.

Living in a “wristwatch society” (27) is a threat to physical and psychological health. We have less time for healthy meals, exercise, and relaxation. Interpersonal relationships are also affected negatively, as “the time needed to genuinely deepen relationships, rather than to simply catch up with others, is not allowed.” (49) Political life suffers, since people don’t have time to get involved. Gone, too, is leisure time for thought and reflection. Decision-making gets short shrift. The “achievement-orientated, fact-obsessed soul” (62) cannot afford time for creative activity and play. “Yet it is only as we cease our restless ‘doing’ that we will discover what is to be done.” (63) Religion and spirituality – facing the deeper

questions of life – also get sidelined in our busyness. Christians are among the chief offenders, for they believe that if they stop their frenzied activity, they will not be pleasing to God, or will be leaving someone's needs unmet.

So what happened to the myth of technology increasing our free time? It was an illusion. The technology we use (household appliances, cars, telephones) does indeed facilitate certain tasks, but it seduces people into thinking they can accomplish *more* in a day, and carry on relationships with more people.

Chapters 10 and 11 give a wonderful survey of the changing attitudes toward time from the Medieval worldview, through the Renaissance, the Scientific Revolution, the Romantic movement, Utilitarianism, all the way to the modern day. Just a few vignettes: The humanists were worried about misuse and wasting of time. The Puritans contributed Sunday Sabbath observance to society. Isaac Newton gave us the concept of mathematical time, artificially divided into equal units. Benjamin Franklin may have coined the phrase “time is money,” and he certainly advocated that approach to life. “Marx foresaw the alienating and socially destructive effects of the mechanisation of work, but he failed to speak out against the excessive regulation of time.” (112) In the nineteenth century, middle-class Christians developed an excessive concern for punctuality. Early twentieth century experiments in time-and-motion measurement by Frederick Taylor have had a lasting effect – particularly on sports, marked by an obsession with records.

Our problems with time stem from the fact that we have deified it, turned it into an idol. At the same time, we have diminished it, treating it as merely a commodity. (Heschel's approach is a good answer to that.)

Some attempts at resisting the tyranny of time come up short. We can learn something from non-technical societies with their more relaxed attitudes towards time (I think of the “mañana principle” prevalent in South America in addition to the examples Banks gives), but a “nostalgic longing for pre-industrial modes of living...rarely leads to any

decisive break with our Western way of life.” (138) The counter-culture has opted out by escaping to other dimensions of time through drugs (paralleled in the middle-class by the abuse of alcohol), but “[t]he basic problems of life, including the time problem, have to be steadily confronted, not just sidestepped or temporarily evaded.” (149) One option that some people have chosen is “scaling down” or an “alternative lifestyle” – seen in the voluntary simplicity movement. But this option is not open to the vast majority living in cities. “In the long run the tyranny of time has to be tackled and broken...in the midst of technological and bureaucratic conditions.” (153) Time management pundits have tried to help people become more effective in their use of time, but they overlook deeper issues. They fail “to challenge the view of time prevailing in advanced industrial societies” (160) and they focus on the individual as the locus of the solution while ignoring structural issues.

Banks details a proper Christian attitude towards time as supported by the biblical outlook. The Bible has a “qualitative approach to time” – *what* is happening is more important than *when* it is happening (Ecclesiastes 3:1-8). (174) While we want things in a hurry, God takes his time. Decisive moments in Scripture (Gr. *kairos*) are contrasted with measured or extended time (*kronos, aion*). Psalm 127:2 is an indication that “[g]ood sleep is one mark of the person who lives in the rhythm of Yahweh’s giving and calling. Transgressing the limits of environmental rhythms can be an act of unbelief, a reliance upon human works rather than on God’s provision.” (183) The purpose of the Sabbath was “to celebrate time...to give people rest, to free them from work.” (183) Jesus demonstrated a casual approach to time, reacting to situations spontaneously as he encountered them, rather than scheduling his ministry activities. The Christian attitude to time should take into account “the tension between the temporal and the *eternal*, between the ‘now’ and the ‘not yet’ ....Our present experience of eternal life should call us to question the desperate busyness which marks so many Christians.” (197, italics his) Counter culture and Eastern religions emphasise *being over doing*, but “from a Christian point of view, the most important thing is not that we are ‘doing’ or ‘being’ but that we are ‘becoming’.” (208)

Banks concludes the book with some general recommendations for living a more balanced life. “We...need to distinguish between the *important* and the *urgent*.” (217, italics his) We should try to be attentive to our natural rhythms and let those guide us rather than being dominated by the clock. In the family, quality time is important, but it is not a substitute for spending extended periods of time together. Taking a “sabbatical” from church and community responsibilities can be a good way to recover from exhaustion and renew family life. We ought to give priority time to close friends and reserve some flexible time so we can visit people on the spur of the moment. It is best to be realistic about the fact that there will always be unanticipated interruptions causing tasks to take longer than we estimate, and we should make allowances for that. Paradoxically, if we “yield ourselves up to moments of genuine idleness or leisurely, carefree play, intellectual, moral and spiritual vigour are infused. Karl Jaspers rightly described freedom to do nothing as ‘the source of everything essential’.” (258) We should “allow time for idleness, just ‘messaging around’ and quiet reflection.” (260)

Like Guardini, Banks sees that the march of technological progress is not going to stop, so we must learn to pace our lives well in the midst of it, and allow time for a healthy spiritual life. Much of what Banks says seems like common sense, but it is a sense that is easily obscured by the culture we live in. It is good to be reminded of these things.

**Albert Borgmann. *Technology and the Character of Contemporary Life: A Philosophical Inquiry* (1984)**

The portentous year of 1984 brings us two of the brightest stars in the philosophy of technology galaxy: Albert Borgmann, a professor of philosophy at the University of Montana, and Erazim Kohák, a Czech philosopher. Each of them makes a unique contribution to the discussion.

Like Heidegger, Borgmann rejects both the *substantive view* (Ellul’s position), in which technology is an autonomous pernicious force, and the *instrumentalist view*, which separates ends from means and sees technology as a neutral tool. He finds the former too

nebulous, the latter too naïve and shortsighted. Instead he proposes that we think about technology in terms of what he calls the *device paradigm*, his version of Heidegger's "essence of technology." A device is something that procures for us a commodity (goods or services) without demanding any skill or attention of us. For example, a stereo provides the commodity of music without our having to know how it works, as opposed to playing a musical instrument which requires knowledge, practice and effort. The distinguishing features of a device are "the concomitance of radical variability of means and relative stability of ends" (43) and the "concealment and unfamiliarity of the means and the simultaneous prominence and availability of the ends." (44) In other words, a wide variety of structurally different devices exists that will produce similar commodities: for example, analog vs. digital clocks. The more sophisticated the devices, the more incomprehensible and concealed from our view are their mechanisms.

The device paradigm distinguishes the foreground of technology (commodities and their consumption, accompanied by discussions of leisure and standard of living) from the background (the mechanics of how the technology works, and the political and economic conditions under which it operates). It is the "sharp delineation of...the commodity a device procures from the machinery on which the function of a device rests." (49) The more technology advances, the less aware we are of the background when we consume its commodities. Borgmann speaks of commodities being disconnected from their contexts. "To consume is to use up an isolated entity without preparation, resonance, and consequence." (51) He gives the example of TV dinners which are prepared instantly and eaten in a hurry without any depth; the fellowship of kitchen and table are missing, and subtract from the meaning of the meal.

The promise of technology – that it would provide freedom from hardship, disease, and toil – has not materialized unambiguously. New freedoms are offset by increased burdens elsewhere (unintended side effects). The benefits of technology are unjustly distributed. More radically, perhaps the promise itself is too vague and not worth keeping;

perhaps it results merely in the pursuit of “frivolous comfort.” (39) Borgmann points out the “irony of technology when liberation by way of disburdenment yields to disengagement, enrichment by way of diversion is overtaken by distraction, and conquest makes way first to domination and then to loneliness.” (76)

Borgmann describes several effects of technology on the social order. One is the problem of disorientation. In pretechnological society, one oriented oneself by reference to the sun. Today we have nothing around which to orient ourselves. We have lost what Borgmann calls *focal things and practices*. A *focal practice* is an activity which “can center and illuminate our lives...a regular and skillful engagement of body and mind.” (4) Playing a musical instrument is a prime example. A *focal thing* is something which is used in a focal practice, such as a violin. Focal things are “matters of ultimate concern that are other and greater than ourselves.” (169) “Commodities, in comparison with focal things, are highly reduced entities and abstract in the sense that within the overall framework of technology they are free of local and historical ties. Thus they are sharply defined and easily measured. Focal things, on the other hand, engage us in so many and subtle ways that no quantification can capture them.” (81) The promise of technology causes us to trade focal things for commodities and engagement in focal practices for diversion. We are left feeling a sense of loss and betrayal of the traditions to which we are indebted. (105)

Borgmann also discusses freedom and responsibility with respect to technology. The substantive view implies determinism, and the instrumental view implies libertarianism. But since, under the device paradigm, technology tends to be invisible, our relationship to technology “is neither one of domination by technology nor one of conscious direction of technology. It is perhaps best called one of implication in technology. Living in an advanced industrial country, one is always and already implicated in technology and so profoundly and extensively that one’s involvement normally remains implicit.” (104-5)

The device paradigm also leaves a dichotomy between work and leisure and diminishes happiness in both. Technology has reduced work to degrading labor, which is “a mere means for the end of leisure.” (114) While work bestows dignity, labor is drudgery. “The degradation of work ends with the elimination of work” as workers are replaced by robots. (123) Increased technological affluence has brought with it a decline in reported happiness. There was and remains an ideal of a life of leisure and the pursuit of excellence, which includes world citizenship, intelligence, physical valor, musical and artistic talent, and charity. This used to be the privilege of the elite, but advances in technology were supposed to make it available to the masses. But to what degree has technology come through on its promise to provide us with more leisure time to pursue excellence, and how much of our free time do we devote to that pursuit anyway?

Borgmann considers what we can learn from nature and from Heidegger towards a solution to the problems of technology. Technology has enabled mankind to tame the wilderness and gain access to it for our enjoyment, and yet technology cannot protect the beauty therein from its own destructive side effects. Technology “can procure something that engages us fully and in its own right only at the price of gutting or removing it. Thus the wilderness teaches us not only to accept technology but also to limit it.” (195)

Heidegger was impressed by simple things that give focus (e.g., a jug, a Greek temple). He saw “technology...as the force that has eclipsed the focusing powers of pretechnological times.” (198) But Heidegger’s views are limited by his suggestion that we have to “seek out pretechnological enclaves” (200) in order to preserve focal things. Borgmann wants to find a way for focal things to thrive in the midst of a technological context.

Thus Borgmann proposes a reform of technology which “is neither the modification nor the rejection of the technological paradigm but the recognition and restraint of the pattern of technology so as to give focal concerns a central place in our lives.” (211) Technology

itself is not a focal practice. Indeed, it has “a debilitating tendency to scatter our attention and to clutter our surroundings.” (208) “If we are to challenge *the rule of technology*, we can do so only through *the practice of engagement*.” (207) This suggests a return to focal things and practices in our lives today. Borgmann highlights “running and the culture of the table” as two such practices capable of providing a centering and orienting focus in the midst of a technological culture. A focal practice can also be a sacred one, a reenactment of some key event, such as the eucharistic meal.

We must distinguish between wealth and affluence, says Borgmann. Wealth is the kind of prosperity that favors “the good life that is centered on focal concerns....It possesses the time and the implements that are needed to devote oneself to a great calling.” Affluence, on the other hand, is “[t]he kind of prosperity...made possible by technology....Affluence consists in the possession and consumption of the most numerous, refined, and varied commodities.” (223) Borgmann points to a revival of hand crafts such as custom-made furniture as evidence that such a distinction can still exist today. He would like to see a two-sector economy emerge which affirms and rewards focal practices while still allowing other more technological kinds of industry to thrive.

Borgmann is quite possibly the most significant contemporary American philosopher of technology. The fact that he is also a committed Christian is reason to hope that the Church, which needs guidance in discerning and counseling the faithful how to live well in this technological society, will listen to him. Though Borgmann does not make explicit reference to a Christian viewpoint in this particular book, he has also recently published *Power Failure: Christianity in the Culture of Technology*,<sup>26</sup> which should prove to be more accessible to the average believer looking for ways to integrate technology with Christian spirituality.

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<sup>26</sup> Grand Rapids, MI: Baker Book House, Brazos Press, 2003. It looks good. Unfortunately, I did not acquire a copy of it soon enough to read it for this paper.

**Erazim Kohák (1933-). *The Embers and the Stars: A Philosophical Inquiry into the Moral Sense of Nature* (1984)**

Before returning to his native Prague, Erazim Kohák was for many years a professor of philosophy at Boston University. He lived in a rustic cabin in the woods of New Hampshire and commuted to Boston for his work. He experienced nightly the transition from the electric lights of the city to the darkness “between the glowing embers [of the fireplace] and the stars” (ix). Watching the dusk gradually enfold the natural world “beyond the power line” (29) opened his eyes to things that are normally hidden in our modern day-to-day life.

Kohák is heavily indebted to Edmund Husserl, whose phenomenology involved *detachment*, standing back from the realm of existence in order to understand it. Husserl tried to build his philosophy without any presuppositions; he refused to go beyond *phenomena*, the data available to consciousness. Likewise, Kohák attempts to detach himself from the realm of technological existence in order to gain perspective on it.

We humans have surrounded ourselves with artifacts of *technē* which obscure the moral sense of our existence. We cannot see the starry sky which declares the glory of God because of all our artificial lights. Technology in itself is not bad; it has brought us much good, and is authentic to human existence. But in the midst of it, we have forgotten who we are. We feel alienated in the “anonymous machinery” (x) of our world; we try to resolve the tension by convincing ourselves that we, too, are machines. Kohák calls us back to nature to focus on the virgin darkness – not to repudiate technology, but to bracket it for the time being – in order to recall us to a sense of meaning, without which the world of artifacts and our existence in it are absurd.

Existentialists viewed the human as a moral subject cast into an alien, meaningless world. This was in contrast to a mechanistic view of humanity held by the Western scientific age. Kohák rejects the notion that humans are fundamentally discontinuous with their natural world. Living in the natural world, we become more aware that we are part of it and at home

in it. The rhythms of human life are regulated by the seasons and the cycles of night and day. Plato and Socrates viewed a dichotomy between humans and the natural world, and as such were the precursors to existentialism. According to their heirs, the Stoics, it is reason or *logos* which gives meaning to the universe, and humans are the bearers of *logos*, so the *cosmos* is meaningless apart from us.

The belief that humans are strangers in the world of nature comes from the methodological device of *self-forgetting* when describing nature scientifically:

If the products of human *technē* become philosophically and experientially problematic, it is...because we come to think of them as autonomous of the purpose which led to their production and gives them meaning. We become, in effect, victims of a self-forgetting, losing sight of the moral sense which is the justification of technology....The task thus is not to abolish technology but to see through it to the human meaning which justifies it and directs its use. (24)

Kohák points out that there is a difference between participatory technology in which human meaning is evident, and automated technology which conceals meaning.

The “moral sense of nature” has to do with its intrinsic value and absolute rightness, not just its utility. It is an expression of its goodness, beauty, and truth; of eternity ingressing into time. “The reason why humans ought not to devastate their world is not simply utilitarian....More deeply, it is *moral*: to destroy heedlessly, to pluck and discard, to have and leave unused, is an act of profound disrespect to the eternal worth of nature. For nature in its integrity is not simply a reservoir of raw materials....[T]he sense of nature as humans encounter it in radical brackets is also moral, a presence of value.” (72) Ultimately, the moral sense of nature is the wonder that there is something rather than nothing. “The moral sense of nature...is the presence of God.” (183)

The night endows us with three gifts – darkness, solitude, and pain – all of which contribute to our grasping the moral sense of nature. Daytime with its artificial lights is the time for *technē*, but nighttime is the time for *poiēsis*, for poetry and philosophy. Solitude (which is distinct from loneliness) is “the condition of being alone in the presence of a living,

familiar world, willing to listen to it, to see and to understand it.” (39) So often we “assume the posture of masters, proudly conquering the world” (81), a posture which condemns us to loneliness in a meaningless world. “The great gift of solitude at dusk is the surrender of that posture, the grateful acceptance of the place of a dweller in God’s world.” (81) In a sense, pain is also a gift, because it opens us up to the pain of the other. Pain is “an intrinsic part of the rhyme and reason of all life.” (42) The Enlightenment promised “freedom from darkness, solitude, and pain...[But] the dream of the alabaster city, unsleeping in its perennial day, where mass communication dispels solitude while chemistry and automation render life painless and effortless, is...an inhuman nightmare.” (42)

The dusk also makes possible the gift of the word – verbal communication – which is more valuable than the mere transfer of information between computers. “In human communication, the purpose of words is not to contain experiences but to point to them and to evoke them...[But the] information conveyed to a computer or transferred between one computer and another must be wholly contained in the words themselves.” (65)

Kohák seeks some justification of our existence in nature. Humans are the most costly to sustain of all creatures on the earth. The historic pat answer that we are a “higher” species is too arrogant and is no longer accepted. But away from *technē*, it becomes evident that nature heals the scars we make. “Within the brackets of the forest clearing...there comes the overwhelming, agonizing, and reconciling recognition of being accepted, being justified. Here the dweller is an alien no longer....There is no reason, no merit, only the basic reality: we are justified, we are accepted.” (93)

Understanding the relationship of belonging as nobler than that of possession can transform our stewardship of the earth. “Loveless having, possessing in the purest sense, remains illegitimate, a theft.” (108) If we treat the land as belonging to us rather than being our possession, we will treat it with love rather than merely extracting its resources for our use. “Humans are [empowered] to give things the love, care, and use they need for their

fulfillment....That is not a matter of taking possession of the world but of making it our own in a bond of mutual belonging, of taking the world with us from the flow of temporality into eternity. That is the task, at once the privilege and the obligation of humans as beings who dwell at the intersection of time and eternity.” (108)

We live in a world of skepticism. Kohák counters it with his philosophy of personalism. He uses the term *skepsis* to mean “rejecting the moral sense of nature as an illusion and probing for other, impersonal models of explanation. Personalism in philosophy is the recovery of the primordial insight, the vision of a *kosmos*, on the other side of *skepsis*.” (127, italics his)

Kohák’s way of dealing with the encroachment of technology is more realistic than Thoreau’s, since he realizes there is no going back to Eden. “The forest clearing, the world revealed in radical brackets, does not constitute an antelapsarian enclave, somehow preserved from the fall. In this respect, Robert Frost’s bittersweet vision of the world “north of Boston” is far more honest than Thoreau’s exaltation of his Walden.” (140)

The suggestion of bracketing technology temporarily in order to rediscover the moral sense of nature enables us to be attentive to God’s creation in a way we could never be in the 24-hour confines of technological society. “It is not easy to sense the reality of God in a world from which we have excluded him.” (150) “[I]n the radical brackets of the embers and the stars, the presence of God is so utterly basic....The most basic trait of the world that confronts a dweller in the radical brackets of the forest clearing is that it is God’s world, not ‘man’s,’ and that here God is never far. The heavens declare His glory, the creatures of the forest obey His law, the human dweller gives thanks for His grace.” (182) The most urgent task we face is “that of recovering our awareness of the presence of God and of nature as His creation.” (183)

Kohák’s goal is to help us recover the meaning of the fruits of our technology, and to call us to a more personal relationship with our world. “To rant against the works of

technology as the source of all evil is not only futile but also false. Technology is not the source of anything, though it does multiply human capabilities for good and evil alike. It is, however, crucial not to let ourselves be deceived by the impersonal meaninglessness of the fruits of *technē* into losing sight of the integral, personal sense of our being.” (211) “[T]he world is not an impersonal store of raw materials from which to take but rather a personal world to which to give. If we honor it, we may become less affluent for it, yet also far richer.” (212)<sup>27</sup>

Kohák and Borgmann, who are (along with Heidegger) the most philosophical of the writers, are equally profound in their different insights. In my view, they have the most compelling answers to this technology-spirituality tension of all the authors I have considered. Like Banks (and to some extent Guardini), they both suggest ways of preserving something of transcendent value in the midst of technological society, without totally rejecting technology.

**Jeremy Begbie. “Towards a Theology of the Arts” in *Voicing Creation’s Praise* (1991)**

Jeremy Begbie is a first class theologian, concert pianist, and ordained Anglican priest. Founder and director of the international research project, “Theology Through the Arts,”<sup>28</sup> he is also Associate Principal of Ridley Hall, Cambridge, and teaches systematic theology. He is an energetic and dynamic performer and lecturer. His several books have focused on the interplay between theology and the arts.

*Voicing Creation’s Praise* is essentially Begbie’s doctoral dissertation in published form. In the first two parts he looks at theologians Paul Tillich and the Dutch Neo-Calvinists in their attitudes towards art. Rejecting those, he goes on to propose his own theology of the arts. Though it is not explicitly related to technology, some of what he says can be applied just as well to technological creativity, which is as much a mark of being human as art is.

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<sup>27</sup> An echo of Borgmann’s distinction between wealth and affluence (see above, p. 46).

<sup>28</sup> <<http://www.theolarts.org>>.

Begbie looks at art through the lens of Christology. Christ, as Mediator of creation, is the agent, the sustainer and the goal of creation. His relationship with creation involves: creating the cosmos out of nothing, continuing a covenantal relationship with all that he has made, and transforming disorder into order. We must also not forget “the colossal significance of the humanity of Christ” (175) and that his resurrection was “the embryonic promise for the entire physical cosmos.” (176)

Human creativity must be viewed as being in Christ. As humans we are “secretaries of God’s praise” (177) and “priests of creation” (177), joining with the whole created order in endlessly praising our Creator. As to the problem of reconciling human creativity with God’s sovereignty, Begbie suggests “tackling the matter from the point of view of the humanity of Jesus Christ.” (178) “God operates not by imposing demands externally, but by coming in Jesus Christ to stand beside us and take responsibility for those demands, and by inviting us through the Spirit to share in the realization of his Father’s purposes for the world. To respond to that invitation is not [to] have our free creativity undercut or lessened, it is to have it established, affirmed and fulfilled.” (179)

Begbie proposes a fourfold interaction of artistic creativity with the world: “[H]uman creativity is supremely about sharing through the Spirit in the creative purpose of the Father as he draws all things to himself through his Son.” (179) As such, it involves *discovery* of the inherent order in the created world, *respect* of the creation, a *development* of the creation (interaction with it, bringing out new forms of order from it), and *redeeming of disorder* of creation: “a renewal of that which has been spoiled.” (179)

Largely due to the legacy of Immanuel Kant, “Western European culture...tends to alienate and isolate the arts from other spheres of human activity.” (186) Kantian aesthetics has seven key features to which Begbie responds:

- 1) It separates art from the material world.
- 2) It divorces art from action.
- 3) It says that form and order are imposed on the world by the human mind, not discovered.

- 4) It isolates art from the particularities of everyday life (“art for art’s sake”).
- 5) It separates aesthetic experience from knowledge.
- 6) It leads to relativism in judging art.
- 7) It enshrines the solitary, narcissistic artist, with no responsibility to society.

In reply, first Begbie argues for a recovery of our embeddedness in creation, and of the physicality of art, its relation to material substance. “[F]aithfulness to the biblical tradition suggests that we are not disembodied spirits or intellects but unities of spirit and matter inhabiting a physical world with which we are intimately bound up and have a large measure of continuity.” (205)

Second, he refers to Nicholas Wolterstorff’s thesis in *Art in Action*, the core of which is that “works of art are first and foremost instruments and objects of action, inextricably part of the fabric of human purpose, through which we carry out our intentions with respect to the world, our fellows, and ourselves.” (207)

Third, Begbie develops further his idea of the fourfold vocation of the artist. The created world possesses a “latent orderliness and meaning, and...a crucial part of human creativity is to be attentive to that inherent order, to discover it and to bring it to light....Hand in hand with discovery...goes respect....A serious artist will endeavour to know and honour his material, to show it a courtesy.” (209) This does not imply that the artist is called simply to reproduce what he sees. “True artistic creativity will be more a matter of an intensive but appropriate engagement with the world in which we are set, in which there is not only *discovery* and *respect*, but also a concern to *develop* and (in some sense) *redeem* what is given to hand.” (215, italics mine)

Fourth, art can refer beyond itself. “[A] work of art can direct our attention to states of affairs beyond itself (and beyond the consciousness of the artist), and...it can reflect (with varying degrees of potency) values which transcend cultural preference, *without thereby losing its distinctiveness as art.*” (216, italics his)

Fifth, applying Polanyi's assertion that we can know something even if we don't have absolute certainty of it, Begbie points out that art can provide "cognitive contact with reality." (217) He affirms with Polanyi that there are non-scientific ways of knowing.

Sixth, the Church's evaluation of art has often involved destroying it "in the name of stifling orthodoxy." (219) Begbie suggests that there are artistic norms by which we can judge art. With another nod to Wolterstorff, he describes three main facets of aesthetic excellence: "unity (coherence, completeness), internal richness..., and 'fittingness-intensity'." (218)

Finally, we can progress "beyond the first person" (220) when we recognize the biblical presentation of "human existence as intrinsically relational." (220) A theory of art which takes this into consideration will have several assertions: 1) Works of art are inherently acts of communication. 2) Artists should give greater attention to their responsibility to society. Conversely, the community has a responsibility to support its artists. 3) Originality is not "the supreme artistic virtue." (221) Tradition is important. 4) "[T]he arts will flower best in the context of...a 'dialogical community.'" (223)

Begbie adds a few words about beauty and inspiration. It goes without saying that "beauty [is] a desirable feature in art." (224) Also, a proper theory of artistic inspiration must include the concept of *responsiveness* – "to the Father, to others and to our created environment." (226-27) Being inspired does not excuse us from "strenuous, painstaking and often frustrating effort. Quite the contrary, it is in just this kind of toil that the Spirit is probably most active." (227) Finally, art that is truly inspired by the Spirit is eschatological.

Begbie is an odd choice in a comprehensive reading list on technology, but he does have something to offer. His fourfold call to the artist to discover, respect, develop, and redeem creation can apply to makers and users of technology. Bertrand Russell once said: "Mathematics, rightly viewed, possesses not only truth but supreme beauty."<sup>29</sup> A suspension

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<sup>29</sup> Bertrand Russell, "The Study of Mathematics" in *Philosophical Essays* (London; New York: Longmans, Green, 1910), 73.

bridge or a well-crafted computer program can possess a certain inherent orderliness and even beauty, I can attest. Software engineers speak of “elegant” algorithms, which are more time-consuming to write, but more satisfying and robust than quick and dirty programming solutions. The engineer and the computer scientist can and should discover and respect the beauty of mathematics and logic, and develop them towards redemptive purposes (more on this in Part III below).

We can also find technological counterparts to some of Begbie’s critiques of Kant. Technology need not be separated from action; in fact it can play a significant role in bringing about change. (I am reminded of the organization Computer Professionals for Social Responsibility, which has among other missions a social justice element.) It seems that technology is sometimes developed for its own sake, just to see how far we can go, but this should be challenged. Technology should relate to and respect everyday life, not just by way of automating it; it should be used to solve real world problems, rather than creating perceived problems in order to sell solutions. Finally, communities of technologists exist and are ever more connected thanks to the Internet, but they are still often isolated from the wider community. Some of the drawbacks of technology could perhaps be minimized if more technologists were integrated into the larger “non-technology” community. Imagine what might come about if artists and programmers began collaborating.

**Charles Taylor (1931-). *The Malaise of Modernity* (1991)**

Charles Taylor, arguably Canada’s greatest living philosopher, is professor emeritus of philosophy and political science at McGill University in Montreal. His project of analyzing the condition of modernity is equal in magnitude and scope to those of Kant, Hegel, and Nietzsche. Taylor does not reduce things to neat systems. He is known for highlighting the complexity of the sources of the modern identity (in his critically acclaimed

book *Sources of the Self*), and the multiple traditions that forge democratic politics.<sup>30</sup> *The Malaise of Modernity* grew out of the 1991 Massey Lectures, broadcast over CBC Radio in November 1991.<sup>31</sup>

Taylor talks about three malaises, or sources of worry, in modernity. The first is *individualism*, which leads to a *loss of meaning*. While the benefits of freedom of choice and rights are tangible, the older, more restrictive moral order used to give a sense of meaning which is missing now. We have experienced “the ‘disenchantment’ of the world.” (3) We have lost the “heroic dimension to life. People no longer have a sense of a higher purpose, of something worth dying for.” (4) We have ended up with a “permissive society,” the “me generation,” and “the prevalence of narcissism.” (4)

The second malaise of modernity is *instrumental reason*, which leads to an *eclipse of ends*. Efficiency is a measure of success.<sup>32</sup> The results are injustice and environmental degradation. “The primacy of instrumental reason is also evident in the prestige and aura that surround technology, and makes us believe that we should seek technological solutions even when something very different is called for.” (6) For example, the use of technology in medicine has replaced the form of care that involved “treating the patient as a whole person with a life story, and not as the locus of a technical problem.” (6)

Thirdly, there are *political consequences*, namely a *loss of freedom*. Few people want to participate in government anymore. This allows the encroachment of “soft despotism” in which the government will not tyrannize with terror and oppression but will become increasingly “mild and paternalistic.” (9) It will leave the individual feeling alone and powerless “in the face of the vast bureaucratic state.” (10)

Many authors such as Allan Bloom (*The Closing of the American Mind*) and Christopher Lasch (*The Culture of Narcissism*) have been critiquing the culture of

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<sup>30</sup> Michael Milde, review of *Charles Taylor* by Ruth Abbey, *University of Toronto Quarterly* 71, No. 1 (Winter 2002): 359, <<http://www.utpjournals.com/product/utq/711/abbey95.html>>.

<sup>31</sup> Taylor also delivered the Laing Lectures (sponsored by Regent College) at UBC in 2001, on a different topic: the relation between religion and culture.

<sup>32</sup> Cf. Ellul’s definition of *technique* above on page 16.

individualism and self-fulfillment that leads to relativism. Taylor understands the drive for self-fulfillment as based on the moral ideal of “being true to oneself” or “authenticity.” (15-16) This ideal is a noble one, but three factors have obscured it from the view of its pursuers. First, the culture of authenticity espouses a “*liberalism of neutrality*...on questions of what constitutes a good life.” (17-18, italics mine) Discussions about the good life are banished to the margins of political debate. Second, *moral subjectivism* has taken hold in our culture; this is “the view that moral positions are not in any way grounded in reason or the nature of things but are ultimately just adopted by each of us because we find ourselves drawn to them.” (18, italics mine) Third, a *social science explanation* has become fashionable: individualism and instrumental reason are explained as “by-products of social change: for instance as spin-offs from industrialization, or greater mobility, or urbanization.” (20)

In order to recover authenticity, Taylor suggests that we need to maintain “horizons of significance” (39), boundaries that define what is significant. “[U]nless some options are more significant than others, the very idea of self-choice falls into triviality and hence incoherence. Self-choice as an ideal makes sense only because some *issues* are more significant than others.” (39)

The modern search for identity neglects the need for recognition of the differences between sexes, races, and cultures – a shared horizon of significance. “[J]ust the fact that people *choose* different ways of being doesn’t make them equal; nor does the fact that they happen to *find themselves* in these different sexes, races, cultures. Mere difference can’t itself be the ground of equal value. If men and women are equal, it is not because they are different, but because overriding the difference are some properties, common or complementary, which are of value.” (51) Our culture places great emphasis on intimate personal relationships. This implies “the acknowledgement that our identity requires recognition by others.” (45) However, the culture of self-fulfillment is “antithetical to any strong commitment to a community.” (43) It views relationships as subservient to personal fulfillment. But identity-forming relationships cannot be instrumental and temporary.

Taylor rejects the substantive view of technology espoused by Ellul. He believes that “while everyone must recognize how powerfully we are conditioned by our industrial technological civilization, those views that portray us as totally locked in and unable to change our behaviour short of smashing the whole ‘system’ [are] wildly exaggerated.” (73) Just as with authenticity, there are “richer moral sources” (96) which have fed the development of our technological society, but we tend to lose sight of them due to the enshrining of instrumental reason. “[I]t is all too easy for us in our culture to think of ourselves as essentially disengaged reason. This explains why so many people find it quite unproblematic that we should conceive human thinking on the model of the digital computer.” (103) We need to retrieve some of those moral ideals which form the background for instrumental reason: first, that of *rationality*, “a self-responsible, self-controlling reasoning” (103), and second, “the *affirmation of ordinary life*” wherein we place great importance upon “production and reproduction...work and the family...and the relief of suffering.” (104, italics mine) In other words, we must find “an alternative enframing of technology” so that we can understand it in terms of “the ethic of practical benevolence.” (106)

Modernity is so thoroughly characterized by its obsession with technology that it is instructive to have Taylor’s cogent analysis of what lies behind the ailments in modern society. He is somewhat tangential to the dialogue of the other authors I am considering, however his moral ideal of reaffirming the value of ordinary life bears comparing with Begbie’s relating of art to everyday life, and is a helpful antidote to technology’s artificiality and abstraction of which Guardini spoke. Recovering an “ethic of practical benevolence” in the work of technology could bring back the days for which Florman is so nostalgic, when engineers thought mostly about solving real world problems. Unfortunately, such a concept seems somehow idealistic and foreign in the field of software engineering, which did not develop until after business considerations ruled the day.

**Neil Postman (1931-2003). *Technopoly: The Surrender of Culture to Technology* (1992)**

Neil Postman was, until his recent death, a popular critic of technology, a lecturer, and professor of culture and communications at New York University. *Technopoly* is one of over a dozen books he wrote on a variety of subjects from education to media, but he will be most remembered for his barbs against technology. He felt the need to be one-sidedly technophobic to counterbalance the excesses of the technophiles, but he did so with wit and aplomb. Like Wendell Berry, Postman refused to use any technology if it did not solve some real problem he had. In his 2000 Laing Lectures at U.B.C., he told the story of an automobile salesman trying to sell him a car with power windows, which Postman did not want. He had not found cranking up the windows by hand to be a problem; in fact, with his sedentary lifestyle, he could use all the exercise he could get. His great line became a refrain: “What is the problem for which [a given technology] is the answer?” Postman died of lung cancer on October 5, 2003. His humorous and prophetic contributions to the discussion of technology will be missed.

*Technopoly* contains some of the earlier seeds which Postman would develop into his “five ideas” that punctuated many of his talks about technology.<sup>33</sup> These five ideas varied in his presentations, but generally included some form of the following:

1) Every technology is both a blessing and a curse. (5) “All technological change is a Faustian bargain. This means that for every advantage a new technology offers, there is always a corresponding disadvantage.” In short, “culture always pays a price for technology.”<sup>34</sup>

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<sup>33</sup> For example: Neil Postman, “Five Things We Need to Know About Technological Change,” address given at New Tech '98 Conference in Denver, Colorado, March 27, 1998, <<http://itrs.scu.edu/tshanks/pages/Comm12/12Postman.htm>>. And “The Blessing and the Curse of Technology,” first lecture of “Where Do We Go from Here?” Laing Lectures, Regent College, February 23, 2000 (available on Regent Audio).

<sup>34</sup> Postman, “The Blessing and Curse of Technology” (Laing Lecture).

2) Technology has winners and losers. (9) “The advantages and disadvantages of new technologies are never distributed evenly among the population. This means that every new technology benefits some and harms others.”<sup>35</sup>

3) “[E]mbedded in every tool is an ideological bias” (13) which makes us look at the world in a certain way and “predisposes us to favor and value certain perspectives and accomplishments.”<sup>36</sup> Extending the well-known aphorism about a man with a hammer seeing everything as a nail, Postman says: “To a man with a computer, everything looks like data.” (14) This idea is summed up in Marshall McLuhan’s famous saying, “The medium is the message.”

A corollary, which Postman sometimes makes into one of the five ideas: “The philosophy embedded in a new technology always makes war with the philosophy embedded in an old technology.”<sup>37</sup>

4) “Technological change is neither additive or subtractive; it is ecological.” (18) In other words, it introduces *total* change. Just as when you remove a species from an ecosystem, the result is a whole new ecosystem, not simply the old ecosystem minus that one species, so also technological change affects everything around it. “The consequences of technological change are always vast, often unpredictable and largely irreversible.”<sup>38</sup>

5) Technology has a tendency to become mythic, to become our transcendent narrative, in place of “earlier, more meaningful stories.” (173) When this happens, “our enthusiasm for technology can turn into a form of idolatry and our belief in its beneficence can be a false absolute.”<sup>39</sup>

Postman classifies cultures into three types: In a *tool-using culture*, “technology is not seen as autonomous, [but] is subject to the jurisdiction of some binding social or religious system.” (24) A *technocracy* is “a society only loosely controlled by social custom and

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<sup>35</sup> Ibid.

<sup>36</sup> Ibid.

<sup>37</sup> Ibid.

<sup>38</sup> Postman, “Five Things We Need to Know About Technological Change.”

<sup>39</sup> Ibid.

religious tradition and driven by the impulse to invent.” (40-41) Finally, *technopoly* “eliminates alternatives to itself in precisely the way Aldous Huxley outlined in *Brave New World*. It does not make them illegal. It does not make them immoral. It does not even make them unpopular. It makes them invisible and therefore irrelevant....Technopoly, in other words, is totalitarian technocracy.” (48) People who live in technopolies “are largely unaware of both the origins and the effects of their technologies.” (138)

Along with technopoly has come information overload. Technopoly insists that more information will solve the world’s problems. But in reality, very few political, social, or personal problems can be traced to a lack of information. (60-61) In technopoly, information has become disconnected from any transcendent sense of purpose. It “appears indiscriminately, directed at no one in particular, in enormous volume and at high speeds.” (70)

Traditional societal institutions (courts, schools, families, political parties, religions, and the state) have become dysfunctional, unable to keep up with the information glut in order to control it. Instead, three technical means of information control have developed: bureaucracy, expertise (or specialization), and technical machinery (e.g., standardized tests). (85-90)

Postman looks at two examples of where the ideology of machines has taken over: medicine and computer technology. As medical practice shifted from listening to a patient’s complaints to examining the patient physically and now indirectly through technical instruments, technology has been a driving force. It has resulted in objective or detached physicians, an increase in iatrogenic illness, and consequently more malpractice suits.

The computer is the machine most closely associated with technopoly. Computer metaphors have invaded our everyday speech, and vice versa (we have “data” stored in our brains, and computer “viruses”). We have lost “confidence in human judgment and subjectivity [and] have replaced this with faith in the powers of technical calculation.” (118)

One of the dangers of technopoly is “technological immodesty.” (120) We forget how much can be done without a computer, and become insensitive to the skills that can be lost when we do use one. “[I]t is actually possible to write well without a [word] processor and...to write poorly with one.” (120)

Some technologies which impinge on our lives are not even visible to us. “If we define ideology as a set of assumptions of which we are barely conscious but which nonetheless directs our efforts to give shape and coherence to the world, then our most powerful ideological instrument is the technology of language itself.” (123) Statistics and public opinion polling are also invisible technologies which can easily be abused. Statistics generates “an enormous amount of completely useless information.” (136) Public opinion is essentially a “yes or no answer to an unexamined question.” (134) Polling also shifts responsibility from political leaders to their constituents.

In the face of technopoly, Postman urges that we become “loving resistance fighter[s].” (182) The “technological resistance fighter maintains an epistemological and psychic distance from any technology, so that it always appears somewhat strange, never inevitable, never natural.” (185) Postman also suggests that a new curriculum will help solve the problems of technopoly. Following Jacob Bronowski, he proposes “adopting the ascent of humanity as a scaffolding on which to build a curriculum.” (188)

Postman’s ideas can be encapsulated in a quote from one of his lectures: “The best way to view technology is as a strange intruder, to remember that technology is not part of God’s plan but a product of human creativity and hubris, and that its capacity for good or evil rests entirely on human awareness of what it does for us and to us.”<sup>40</sup>

Postman is reminiscent of Ellul in his dark pessimism about technology. His choice to be a “loving resistance fighter,” which involves both avoiding technology wherever possible and sounding the clarion call about the dangers of technopoly, puts him in the

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<sup>40</sup> Ibid.

positing of carrying on the torch that Ellul bore. But both of them have a certain negativity which prevents them from suggesting realistic approaches for those of us who find ourselves skilled with technology. And so we move on to my contribution to the dialogue.

### **PART III: INTEGRATIVE AND REFLECTIVE ESSAY**

Part of my purpose for writing this comprehensive paper was to integrate the material and make it relevant to my own quest for a resolution to the technology-spirituality tension. Thus, in this final part, I will address two of the points of contact between technology and the spiritual life: technology and creation, and technology and time. In the process I will also relate technology to the whole biblical story of creation-fall-redemption. This is by no means a thorough biblical theology of technology, as such an endeavor would be beyond the scope of this paper, but I will attempt in this section to bring biblical insights together with the ideas of the writers discussed above (and some others I have read), as well as my own reflections from living and working with technology.

I will contend that technology in and of itself is a good thing, given to us by God for useful purposes and for glorifying him. However, our use of technology has been marred by the Fall, and this affects the creation, our experience of time, and our spiritual life. I find reason for hope that technology will be redeemed in the new heaven and the new earth. In the meantime, we are called to exercise stewardship over technology and use it to accomplish God's redemptive will for the world in this "already but not yet" age. One way that we can maintain an eternal perspective and protect our spiritual life from becoming suffocated by technology is to observe the gift of Sabbath rest in our engagement with technology.

#### **1. Technology and Creation**

A foundational truth for thinking about technology and creation is that when God created the material world, he pronounced it good, indeed "very good" (Gen 1:31). God demonstrated himself as "the arch-technophile and the ultimate enabler of human technology" when he "majestically displayed his *techne* by shaping [the universe's] materials

into all the wonders, both inert and living, that we now observe.”<sup>41</sup> Thus God demonstrated that the activity of creating new things out of the stuff of the earth is inherently good.

An important related piece of biblical background to human technology is the *imago Dei*. We are created in the image of God (Gen 1:27). That means, among other things, that we have in us a creative bent akin to God’s. “[T]he image of God in people...affirms human creativity as something good since it is an imitation of one of God’s own acts and perfections.”<sup>42</sup> Our urge to invent things, to create technology, whether it be to solve problems or just for the fun of it, comes out of that God-imaging creative impulse. Technological ingenuity is part of what it means to be human, and any good theology of technology has to take that into account.

Deuteronomy is scattered with promises of God’s blessing the work of human hands, e.g., 16:15: “*For the Lord your God will bless you in all your harvest and in all the work of your hands, and your joy will be complete.*” (italics mine) The context is of course agricultural, but an embedded truth is that we are to take joy in the work of our hands, which includes technology – yes, even computers and software.

With that prelude, we can affirm that “the biblical basis for human use of technology [is] our calling as caretakers or stewards of God’s creation.”<sup>43</sup> In the Genesis account of creation, God instructed the man and the woman, “Be fruitful and multiply; fill the earth and subdue it; have dominion over the fish of the sea, over the birds of the air, and over every living thing that moves on the earth.” (Gen 1:28, NKJV) Some people imagine that God intended us to carry out this creation mandate in an idyllic natural setting forever, but we have no scriptural grounds for such speculation. Quentin Schultze writes, “We...are called to care for and develop this good creation....In this sense, technological innovation per se needs

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<sup>41</sup> Denis R. Alexander, “Worshipping God with Technology,” *Cambridge Papers Towards a Biblical Mind* 12, No. 4 (December 2003), 1-2.

<sup>42</sup> Leland Ryken, *The Liberated Imagination* (Colorado Springs: Random House, WaterBrook Press, Shaw, 1989), 67.

<sup>43</sup> Quentin Schultze, *High-Tech Worship* (Grand Rapids, MI: Baker, 2004), 46.

no justification beyond God's own mandate for responsible human caretaking. We are to develop and use technology as stewards of God's creation."<sup>44</sup>

As I write this section, I am sitting on Galiano Island, where the eagles soar, the sun reflects off the water, and the smooth root of an arbutus tree invites me to sit and engage in some meditative thinking for a while. The temptation to idealize the natural world apart from human technology, as Thoreau and Berry tend to do, is very real in this place. But even here, technology is in evidence and helps us enjoy creation and exercise dominion. For example, I've made myself comfortable in borrowed office space in the retreat home where we are staying for the weekend. On a shelf above the desk where I sit at my laptop, I found a copy of "The Birds of Hunterston Farm," beautifully printed in color, probably on the HP DeskJet 710C which sits to my right. From the binoculars through which we watch the birds, to the Web-based system for making ferry reservations to get to the island, our use of technology has the potential to be good and to enhance our respect for God's creation. If God endowed us with the ability to create these things, surely we must find a way to do it to honor him and care for his creatures.

In that regard, one characteristic of technology is paramount: it can reveal to us the awesome beauty and complexity of the creation, and thus point us to the Creator. While Kohák would say that it is primarily in the "radical brackets of the embers and the stars"<sup>45</sup> – away from technology – that we can have an unobstructed view of God's presence in creation, there are some parts of creation which are too large or small to see with the unaided eye. It is through technology that we can observe distant stars and tiny microbes, and learn how everything works. The more we discover about how this world is knit together, the more mystery we find in it. But this same power of technology has a shadow side: "it encourages us to think that we have a 'God's-eye' view, that by means of our technological

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<sup>44</sup> Schultze, *High-Tech Worship*, 47.

<sup>45</sup> Kohák, *The Embers and the Stars*, 182.

towers we can lift ourselves to a heaven of our own making.”<sup>46</sup> This leads us to consider the Fall.

## 2. Technology and the Fall

The tragedy of the Fall (Gen 3) had widespread repercussions on all of human activity. It was felt immediately in the painful toil involved in bringing forth the fruits of the earth, and in the ways that people related to each other (blaming, jealousy, anger, violence, and ultimately murder). Our dependence on the created world for sustenance, and our vocation of tending it and exercising dominion over it, were twisted into a desire to conquer and exploit the earth, to view it as “standing-reserve” in Heidegger’s words.

Our creation and use of technology are affected through and through by the Fall. Not content with plowshares, we make swords and weapons of mass destruction. Our greed has caused us to acquire technology that we don’t really need, at the expense of other people, and to the detriment of the environment. The technological society has resulted in whole classes of people (the technology “have-nots”) being excluded from access to government, education, and honest livelihoods. We are often more interested in the money that can be made through selling our technology than we are in the good it could do for the people who buy it. I remember trying to suggest a feature in Microsoft Money (a personal finance product I worked on), which would help users to be more responsible with their money and get out of debt. My idea was shot down because it would not help sell more copies of the product.<sup>47</sup>

Some of the problems which we have attempted to solve through technology (e.g., diseases, communication barriers in foreign languages), were at least in some cases the results of sin (1 Cor 11:30; Gen 11:7-9). Sometimes the creation and use of technology in the workplace is dehumanizing or downright injurious to workers (assembly lines, asbestos, carpal tunnel syndrome). The expansion of technology has taken previous corruption to new

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<sup>46</sup> Loren Wilkinson, ed., *Earthkeeping in the '90s* (Grand Rapids, MI: Eerdmans, 1991), 265.

<sup>47</sup> Since I left the company, they have finally added the feature, or something similar.

levels and has opened the door for a vast variety of evil never dreamed up before (Internet pornography, spam, computer viruses). The whole predicament of “unintended side effects” of technology (pollution, car accidents, job redundancy) would not be an issue if we lived in an untainted world. And some categories of disaster can only be conceived of in a technological world: computer crashes resulting in data loss cause untold anguish, whereas before nobody would have had such “important data” to lose.

Sometimes in our enthusiasm over the “coolness” of technology, we apply it in thoughtless or unnecessary ways. While this is not always immediately and visibly harmful, it contributes to an unhealthy dependence on and overuse of technology, which ends up taxing the environment. Al Erisman gives one illustration:

[The organizers of a business forum] wanted to be sure that people who came to the meeting had paid...and that everyone who paid had checked in. They considered purchasing laptops with a wireless network linking them. When people arrived, those who had pre-paid would enter their e-mail address and password to check in, then pick up their pre-printed name tags. Those who had not pre-registered would...enter their name and address. In the end, there would be a record in the database of everyone who had come to the event as well as those who had paid but not attended.

There is a much simpler solution. There is no reason for the majority of people who pre-registered to enter anything into a computer. They simply pick up their name tags and go into the meeting. Those name tags left over represent the people who paid and didn't show. In addition to eliminating some technology expense, this greatly shortens the irritating check-in lines, reducing the work required for most participants.<sup>48</sup>

Another inappropriate use of technology is when we use it for our benefit without regard to the real needs of others. Bill Gates turned some heads when he denounced techno-enthusiasm at “Creating Digital Dividends,” a conference on the digital divide. There were a bunch of tech industry wizards discussing how “technology can make both entrepreneurs and consumers out of people earning less than \$1 a day.”<sup>49</sup> Gates, self-made billionaire and the world’s most recognized technophile, shocked them all when he got up to give his keynote

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<sup>48</sup> Albert Erisman, “Inappropriate Technology,” *Ethix* 28 (March/April 2003), 4.

<sup>49</sup> Dan Richman, “Gates Rejects Idea of E-utopia,” *Seattle Post-Intelligencer*, October 19, 2000, <<http://seattlepi.nwsource.com/business/gate19.shtml>>.

address: “Let’s be serious....Do people have a clear view of what it means to live on \$1 a day? ... There are things those people need at that level other than technology.... About 99 percent of the benefits of having [a PC] come when you’ve provided reasonable health and literacy to the person who’s going to sit down and use it.”<sup>50</sup> When others challenged him with the notion that technology would bring economic development, which would lead to improvements in health care, Gates replied, “One million people a year (in the U.S.) were not dying of measles when the microprocessor was invented.”<sup>51</sup>

Chief among the sins enmeshed in our use of technology is the striving for knowledge and for independence from God. Eve took the fruit from the forbidden tree when she saw that, among other things, it was “desirable for gaining wisdom” (Gen 3:6). In *The Meaning of the City*, Jacques Ellul describes the way that the building of Babel and other cities symbolizes the quest for self-sufficiency and self-aggrandizement. The technology we invent today follows in these same patterns. Humans use technology in order to become more and more free from the limitations set by God (mortality, for example), and indeed to become like God in the scope and breadth of our knowledge. There are certainly many noble uses for information technology, but when the motive behind the grasping for knowledge is pure mastery apart from any relationship with the Master, that is sin. I would not suggest that we stop using our technology to explore to the outer reaches of the universe and the tiniest particles in the atom, but if what we are looking for there is proof that there is no God, or at least that he is irrelevant for us now, then we are rebelling against him.

Job 28 is one of the principal passages in Scripture describing human technology as such. It is a beautiful poetic depiction of the mining industry. “Man puts an end to the darkness....Far from where people dwell he cuts a shaft...He tunnels through the rock; his eyes see all its treasures....” (vv. 3-11, passim) And yet this is juxtaposed with the incomparable value of wisdom, which man cannot find or comprehend. (vv. 12-28) The

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<sup>50</sup> Ibid.

<sup>51</sup> Ibid.

conclusion is, “The fear of the Lord—that is wisdom, and to shun evil is understanding.” All the wealth our technology can gain for us is no substitute for the wisdom of God, and relationship with him, which is rooted in reverence and obedience to him.

There is almost a worship of technology today in many quarters. It has become an end in itself, not merely a means to an end. When we trust in technology for our deliverance instead of in God, we are making it into an idol. The psalmist has a caution about this: “But their idols are silver and gold, made by human hands....Those who make them will be like them, and so will all who trust in them.” (Ps 115:4-8) It is true that in a sense the more we trust in technology, the more we become like machines. We treat each other like computers: give the right input and we will get the output we want.

There is something about creating software that I think makes it the closest we humans can ever come to creating *ex nihilo*. Although the tools used in producing software, and the media on which it is distributed are all material things, software itself is simply made up of ideas and instructions, nothing physical. True, it is represented in electronic impulses in computer hardware, which are physical. But the pieces out of which it is constructed are figments of the practically limitless imagination of a software engineer. Almost whatever a programmer could dream up, given enough time, and a sufficient team of intelligent helpers, he or she could make.<sup>52</sup> There is a great temptation to hubris in this form of creativity. On the other hand, I find it can also be a gateway into contemplating the mysteries of the Creator of the universe, just as thinking about human fatherhood can provide an image, albeit imperfect, of the character of God as Father. This leads to thinking redemptively about technology.

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<sup>52</sup> The author of a novel might perhaps feel something like what a programmer feels, because a whole world can be created with words, which, though represented in physical form on paper, are not themselves physical entities.

### 3. Technology and Redemption

Though it seems hard to envision now, technology will somehow be redeemed in the new heaven and the new earth. After all the negative focus on cities in the Bible, which Ellul highlights, it is surprising that the ultimate image of God's plan of redemption for the world involves a city, the new Jerusalem (Rev 21:1-4). According to Ellul, Jesus redeems the city, the symbol of human technological striving. This seems to suggest that no longer will we use technology to assert our independence from God, but rather we will bring it as an offering to glorify God (Rev 21:24). It will be transformed in such a way that it has no negative side effects. We can look forward to technology no longer being used for warfare but only for peaceful purposes (Micah 4:3).

We live now in the eschatological tension between the tower of Babel and the new Jerusalem. How can we help draw technology towards its redemptive *telos* in the midst of the reality of a fallen world? We can work to realize its good potential and minimize its harmful consequences, master it for building community rather succumbing to its anti-social tendencies, and enhance "its capacity to be functional, beautiful and appropriate rather than ugly and rapacious."<sup>53</sup>

There is no shortage of evidence that technology can relieve hardships and solve otherwise intractable problems. Though Neil Postman may have been reluctant to admit that many of these were actually "problems" to begin with, even he knew and appreciated the benefits of electric lights for extending our days, automobiles for extending our mobility, and medical advances for extending our lifespan. In that sense technology can function redemptively in a broken world. Broadcast technology has opened up links with the outside world to people sequestered under repressive regimes. Various technology systems (transportation, communication, law enforcement) have been combined to save lives of abducted children. Computer network technology has brought healing in relationships

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<sup>53</sup> Denis R. Alexander, "Worshiping God with Technology," 4.

(witness the happy stories of long-separated family members who have found each other over the Internet). The list could go on ad infinitum.

Of course the very same technology is sometimes the cause of further problems, but that is where we can take our role as stewards of technology seriously. We need to find ways to continue using technology to ameliorate suffering and to bring joy, without causing more pain in the process. And we must be aware of how interconnected the world is now. The side effects of our technology might not be evident in our own backyard, but half a world away they could be causing havoc. It is vital that we educate ourselves about the potential dangers, and commit ourselves to thinking them through before proceeding with any new technology. As Grant pointed out, just because we can do something from a technological standpoint, it does not follow that we should.

The information technology industry is relatively “clean” as far as its effect on the environment, in the sense that there is no pollution from producing software. But there is still a lot of waste. I remember once, when I was working at Microsoft, walking past a storage closet where an administrative assistant was throwing away hundreds of boxes of old versions of Microsoft software. There was no attempt to donate obsolete products to worthy causes (Microsoft as a rule does not do that because it would involve providing indefinite support for outdated versions). This person was at least breaking down each box and putting recyclable materials into a separate bin; but it still shocked me how quickly such a vast quantity of perfectly good software becomes “junk.”

Albert Borgmann’s concept of “focal concerns” is significant for thinking redemptively about technology. Borgmann believes that if we take care, we can ensure that focal things thrive in the midst of a technological context. But even after citing Tracy Kidder’s account in *The Soul of a New Machine* of the engaging work of a team that designed and constructed a computer, Borgmann still claims that work with computers is not and cannot be a focal practice because it necessarily alienates people from the outside world.

I am not convinced that Borgmann has the final word here. Like most philosophers who try to resolve the problems of technology, Borgmann has never truly inhabited the world of the technologists. I am trying to grapple with his ideas and see if there is any way possible for those of us who have been trained in that field and still enjoy it to find focal qualities in the practice of software engineering. Perhaps a revival of software craftsmanship is a step in the right direction.

Bezalel, the craftsman charged by God with making fixtures for the tabernacle (Ex 31), was the first person mentioned in Scripture as being filled with the spirit of God. His ability to work skillfully in all kinds of metal, stone, and wood, was a gift from God. In Bezalel we see a close blending of technology and the arts. Some of the philosophers who are pessimistic about technology – Heidegger for example – propose the arts as a corrective to technology, forgetting that the urge to be creative is at the core of both art and technology. In fact, there is a fine line between whether technology is an art or a science. In my view, it is probably more wholesome to view it as a craft and exercise it that way. A craft combines technical knowledge with practiced skill, and involves artistic and aesthetic elements. This, I believe, is how we ought to make technology. There is a book called *Software Craftsmanship: The New Imperative*, which encourages software developers to “turn from the technology-for-its-own-sake model” to one that “focuses on the people involved.”<sup>54</sup> The craftsman takes pride in his work, and is more likely to take into account its potential impact. He is not just out for monetary gain, nor is he trying to create something simply because it wows people or pushes the boundaries of what is possible. I wonder how different the world would be if the big technology trade shows like COMDEX in Las Vegas were operated more like traditional arts and crafts fairs?<sup>55</sup>

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<sup>54</sup> Pete McBreen, *Software Craftsmanship: The New Imperative* (Boston: Addison-Wesley, 2002), back cover.

<sup>55</sup> There is some evidence that after the fallout from the bursting of the 1990s technology bubble, there is a return to a more modest use of technology as a craft. But the pride of sinful humanity creeps back in again ever so quickly.

I realize that there is a danger of idealism here. I take to heart Florman's critique of Schumacher. There is something inherently "small" about a craft which might be impossible to apply to the world of necessarily big technology – large software systems needed to run hospitals, universities, corporations, and countries. But I still see evidence of the craftsman mentality in companies like Google who solve huge problems (how to sort through and find useful information in the vast matrix of the World Wide Web) and yet still manage to do what they do well, and take pride (in the good sense) in the quality of their work. Judging by their recruiting materials, they seem to tinker with technology for the joy of it, which is redemptive to the soul. However, I do sometimes despair of ever being able to recover the craft of software development when the tools for doing it have become so complex that nobody can comprehend them anymore. Borgmann's "device paradigm" reigns.

Florman's idea of the existential pleasures of engineering is inherently redemptive. Florman misses out on a Christian perspective, though. In the film "Chariots of Fire," Olympic runner Eric Liddell said, "God made me fast, and when I run, I feel his pleasure." I wonder if there is a way in which we who make and enjoy using technology could learn to say, "God made me good at writing software [or whatever it is we do technologically], and when I do that I feel his pleasure."

There is some talk these days of technology *being* our redemption. It is a new kind of gnosticism which views the body and physical existence as bad, and hopes for salvation from this human condition through being able to upload our brains into a computer in order to survive beyond physical death.<sup>56</sup> While there are appropriate applications for artificial intelligence (e.g., natural language recognition, for improving the experience of interacting with computers), I do not find virtual salvation a pleasant prospect. Material existence is part of God's created order, and he called it good. I would not want to exist somewhere as a disembodied mind, my thoughts implemented in computer code.

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<sup>56</sup> See, for example, chapter 10, "The Immortal Mind: Artificial Intelligence," in David F. Noble, *The Religion of Technology* (New York: Penguin, 1999).

I don't know what technology will look like in the new heaven and the new earth, but We read in Scripture that God will make all things new. If there is no illness and sorrow, no problems to be solved in the life to come, will there be a need for technology? I don't know. Maybe the creation of technology will become more like God's creation of the earth. We will do it just for our delight and for God's. The old King James renders Rev 4:11: "Thou art worthy, O Lord, to receive glory and honor and power, for thou hast created all things, and for thy pleasure they are and were created."

#### 4. Technology and Time

Technology has profound effects on how we experience time. It seems that our society is running on overdrive these days. Robert Banks has developed this idea in *The Tyranny of Time*.<sup>57</sup> Advances in technology were supposed to save us time and give us more leisure. Ironically, the opposite has turned out to be the case. Whatever time we have gained through automation of household chores has been more than offset by the time demands of maintaining a higher standard of living.<sup>58</sup> We have more possessions requiring maintenance, and more complex decisions to make about what goods and services to buy, which sometimes necessitates hours of research. Because we can do things faster, our expectations about how much we can and should do have increased. We are "caught in an ecstatic technical vertigo."<sup>59</sup> We have lost much of our sense of rhythm in life, as we live in a "24/7" world.

Another effect of the acceleration of life is that we expect everything to take less time, not just tasks that are aided by technology. A culture of impatience has developed. People have short attention spans. We want everything immediately. The relaxed pace of an exchange of handwritten letters in days gone by has given way to people getting frustrated

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<sup>57</sup> There are a number of other recent books that address this theme, such as James Gleick's *Faster: The Acceleration of Just About Everything* (New York: Vintage, 2000).

<sup>58</sup> Banks, *The Tyranny of Time*, 82-83.

<sup>59</sup> John Wilkinson, "Translator's Introduction" in Jacques Ellul, *The Meaning of the City* (Carlisle, UK: Paternoster, 1970), xi.

when someone doesn't reply to their e-mail the same day. We have no time for waiting for natural human processes like grieving and relationship-building. Always needing to move on to the next thing, we have lost the sense of leisure. We hardly know what to do with time off. Few of us have an appreciation for the contemplative life or meditative thinking.

Neil Postman talks about the paradox of how the technology of time measurement came to serve the opposite purposes for which it was intended. The mechanical clock was invented by monks in Benedictine monasteries for use in observing the daily hours of prayer. But the clock went on to create the possibility for regular working hours and thus to support capitalism and those who worship Mammon rather than God.<sup>60</sup>

The technology of the Industrial Revolution brought with it longer working hours. Later, the rise of labor unions brought about legislation which tempered that effect, but the trend has reversed again as technology has become more complex. Now people have to work harder to keep up with the technological changes in their fields. Even at Microsoft, where I used to put in 60-70 hour weeks routinely, it was easy to feel like one was constantly behind in the rapidly changing computer industry.

I would like to suggest that a biblical model of time can inform our interaction with technology. A healthy relationship with technology must involve a Sabbath rhythm of life. Also, we must keep things in the perspective of eternity, not just look for the short-term gains of technological advances.

I was intrigued a few years ago to read an article about a "Technology Sabbath" that took place at Seattle Pacific University.<sup>61</sup> A group of 300 students from two of the residence halls voluntarily gave up the nonessential use of technology (apart from class work) for a week, so they could focus on friendships and faith. They avoided television, video games, online chat rooms. They walked down the hall to talk to a friend instead of using the

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<sup>60</sup> Postman, *Technopoly*, 14-15.

<sup>61</sup> Sally Macdonald, "SPU Students Take a Break from Technology," *Seattle Times*, February 8, 2001.

telephone or e-mail. The experience was eye-opening for most of them. They rediscovered the joy of simply spending time together the old-fashioned way.

Abraham Heschel helps us to view the Sabbath as a gift that sanctifies time and gives us an eternal perspective. And Erazim Kohák invites us to “bracket” technology, to step away from it periodically so that we can recover the natural rhythms of life and discern the moral sense of nature and of the very technology we need to use. Kohák also reminds us that humans are uniquely privileged to “dwell at the intersection of time and eternity.”<sup>62</sup> I suggest that taking time away from technology on a regular basis will help transform the way we relate to it, and will bring eternity back into focus. It will help us become aware of the impact technology has on our lives, the “Enframing,” as Heidegger calls it, by which technology colors how we construe everything.

I have had an interesting experience this Lenten season. I had become aware of how many hours a day I was wasting surfing the Internet. I had become an “info junkie.” At the suggestion of a friend, I decided to give up the Internet for Lent. It has been hard at times (and I’ve had to “cheat” to look up a couple of references for this paper), but on the whole it has been a refreshing experience, and has taught me how much I was inhibiting my prayer life by bombarding myself with information. I was drowning out the voice of God. This experience has reinforced my conviction that a Sabbath practice, whether it be literally one day out of seven or simply a rhythm of rest from technology, is essential to maintaining a healthy spirituality.

The important thing is to blend Sabbath into a regular cycle of engagement with technology, not to withdraw from modern technology completely like Thoreau and Postman do. Samuel Florman quotes Arnold Jacob Wolf, who was criticizing Charles Reich’s *Greening of America*: “It is not possible to be without doing. The Sabbath is not the week....Aimlessness does not fit the world which God made....I do not believe that the task of

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<sup>62</sup> Kohák, *The Embers and the Stars*, 108.

life is to avoid the week....Our task is to find a way to work that is really working and not also self-destructive—really doing the hard things that the world needs and the self needs.”<sup>63</sup>

A better stance than that of a “loving resistance fighter” (Postman) is Heidegger’s idea of “releasement” towards technology, being free to take it or leave it. I find that fasting from technology for a period of time helps me to embrace that attitude when I come back to it. There was a point in my life when I felt the need to have the radio on in the car all the time. Then one day my radio broke, and I was forced to make peace with the silence on long trips. I came to enjoy it as a time of prayer. Later, when I did finally get the radio fixed, I was able to choose freely whether to listen or not.

One of Wendell Berry’s books of poetry is titled *Sabbaths*.<sup>64</sup> In these poems he explores the idea of “Sabbath rest and enjoyment of creation.”<sup>65</sup> One of the benefits of taking time away from technology, information technology in particular, is that it puts us back in touch with the actual physical creation. Computers can do a lot to inform us about creation, to help us organize conservation movements, to research and write our philosophies of technology. But nothing beats going for a walk in the woods in Pacific Spirit Park or along the beach in Vancouver. Kohák writes, “[T]he Sabbath day...is not a day of rest only. Far more, it is a day of thanksgiving. Not the absence of activity but the act of honoring, of giving thanks, is what restores the human soul and puts it at peace.”<sup>66</sup> A technology Sabbath can facilitate this attitude of gratitude to our Creator. It is also a way of anticipating the new Jerusalem, when enslavement to technology will be no more. “There remains...a Sabbath-rest for the people of God.” (Heb 4:9) Perhaps this can be a way, for those of us with our feet firmly planted in the twenty-first century, to practice Thoreau’s “art of living well.”<sup>67</sup>

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<sup>63</sup> Florman, *The Existential Pleasures of Engineering*, 150-51.

<sup>64</sup> San Francisco: North Point Press, 1987.

<sup>65</sup> Anne Husted Burleigh, “Wendell Berry’s Community,” *Crisis* 18, No. 1 (January, 2000): 28-33. Reprinted in *Catholic Educator’s Resource Center*, <<http://www.catholiceducation.org/articles/arts/al0051.html>>.

<sup>66</sup> Kohák, *The Embers and the Stars*, 81.

<sup>67</sup> Ralph Waldo Emerson, “Introduction” in Thoreau, *Walden*, xii.

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