

Human Meaning in a Technological Culture

RELIGION IN AN AGE OF TECHNOLOGY

by Willem B. Drees

Abstract. Technology raises important religious issues and not only moral ones. Given that technology is about transforming reality, these issues are different from the issues that arise in dialogues on religion and science that are primarily after understanding reality (e.g., cosmology, physics, and evolutionary biology). Technology is a multi-faceted reality—not just hardware but also skills and organization, attitudes and culture. Technology has been appreciated as well as considered a threat but is best understood contextually and constructively.

Keywords: culture; IRAS conference; technology.

We live in a technological culture. Our identities, our responsibilities, the communities we belong to, our hopes, dreams, and nightmares are shaped by rapidly evolving technology. Information technology and biotechnology affect our visions of meaningful human life. What is it to be human if we are dependent on (or in the service of, or even replaced by) a web of technological artifacts and systems? What concepts of “the natural” and “the sacred” are invoked by the accusation of “playing God”? In what ways will our religious and humanistic traditions be transformed? And in what ways will our traditions shape our technological culture? (See the contribution by William R. LaFleur in this issue, pp. 623–42.)

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Whereas discussions on technology often concentrate on ethical issues, we also need to explore and evaluate how powerful technologies redefine, for better and for worse, human identity and meaning as well as ideas about reality and God. In the summer of 2001, the Institute for Religion in an Age of Science (IRAS) devoted its annual conference on Star Island to “Human Meaning in a Technological Culture.” It was a special setting for such a topic—a remote island, ten miles off the Atlantic coast, with sober living rather than the high-tech world of space exploration or biotechnology. But even on such an island, we humans depend on technologies—boats, food preservation and preparation, housing. The conference saw as well the use of some very modern technologies: Power Point presentations and the generation of virtual reality. The essays in this section emerged from plenary presentations during this IRAS conference.

By way of introduction, let me first make clear how this topic fills an important but neglected niche in the religion-and-science domain. Second, I consider some aspects of technology and technological culture.

TECHNOLOGY’S PLACE IN RELIGION AND SCIENCE

The standard view of technology’s place in relation to religion and science can be illustrated well with the titles of two books from Ian Barbour: *Religion in an Age of Science* and *Ethics in an Age of Technology*. This may seem an obvious pair of titles, but it is nonetheless a particular and consequential way of dividing the field.¹ Why not also *Religion in an Age of Technology*? And does the absence of *Ethics in an Age of Science*, to take the fourth combination of the pairs {science, technology} and {religion, ethics}, imply that there is no moral issue in relation to scientific knowledge but only one in relation to technological applications?

The underlying issue is in part the understanding of “science.” There is a serious interest in the religious implications of cosmology and fundamental physics—our attempts to understand the nature and origins of physical reality. And there are many books on religion and evolutionary biology, on our understanding of the natural history of our world. In focusing on cosmology and natural history, we deal with aspects of reality we may seek to understand but (being history) cannot change. But science is not only about understanding reality. Science is also about *transforming* reality. That may not be obvious when cosmology is our prime example, but it is clear when one thinks of chemistry, with its roots in alchemistic practices, seeking to purify reality, to transform elements, to create new substances. Disciplines such as the material sciences are clear examples of this active, reality-transforming side of science in contrast to science as the quest to understand reality. The case for including engineering among the sciences has become far more serious over time, with a fundamental transition in the eighteenth and nineteenth centuries with the rise of chemistry and the

control of electromagnetism. Modern technology is interwoven with science: the computer would not be possible without the understanding provided by quantum physics, and genetic engineering depends on understanding the double helix of DNA. And vice versa—progress in understanding depends on progress in technology.

The underlying issue is in part also the understanding of “religion.” If the interest in religion, in the context of religion and science, is defined by an apologetic interest in arguing for the plausibility of God’s existence, approached as “the best explanation” of reality and its order, or by conflicts between religious and scientific explanations, then the prime interest in science is for the understanding of reality it aspires to offer. But religious traditions have not only this explanatory function but often also an evocative function and a transformative interest—calling people to work for a better world, seeking to liberate beings from bondage. Such liberationist theologies certainly should have an interest in the way we humans transform reality, for better or for worse. And cosmologically oriented theologies and worldviews, too, need to accommodate the fact that our world turns out to be so flexible, so malleable, as technology reveals it to be.

DIMENSIONS OF TECHNOLOGY

When speaking about technology, most people at first refer to *devices* such as the telephone, the car, and the refrigerator. We live in the midst of such technological artifacts, machines, as materially present entities. But technology is more. These devices cannot function without *infrastructure*. Think of telephone lines, receivers and transmitters, electricity, and gas stations, and behind those, more infrastructure such as refineries, ships, pipelines, and oil wells—and there the sequence ends, as the oil deep in the ground is not itself a product of human technological activity. That is where we touch upon natural resources, at the beginning of the line. And in using oil as fuel we also have to get rid of excess heat and waste products and thus need not only a well but also sinks to get rid of what we do not use, generating ecological problems for atmosphere and soil.

Devices and infrastructure may still be imagined as hardware, the material manifestation of technology, but infrastructure is also organization. Technology is a *social system*, both for the kind of actions it requires and for the services it provides. And technology depends on *skills* (and thus on educational systems) as much as on hardware. Highly technical medical disciplines such as surgery are certainly also about technical skills of the humans involved. And skills are also involved in ordinary activities; driving a car is a technical skill. Technology encompasses more than the devices of metal and plastics that may come to mind first.

So far, I have referred to two “layers” of technology: the material manifestations of technology in devices and infrastructure and the social, human dimension of organization and skills. There is a third layer, the

psychological level. We also can consider particular *attitudes* technological. A problem, whether a leaking roof, illness, or miscommunication, is not the end of a story, to be accepted as a fact of life, as fate, but rather is a problem to be addressed. An active attitude, analyzing a problem in order to solve it by practical means, is part of our lives. This is to us so much a self-evident part of our lives that we find it sometimes hard to understand cultures in which a tragic or fatalistic attitude is more common. The technological attitude brings us to a major aspect of some of the contributions in this thematic section: Do we wait for God to rescue us, or should we do it ourselves? How do we see human action in relation to the wider understanding of reality?

Last but not least, technology is more than devices and infrastructure, organization, skills, and attitudes. We live in a *technological culture*. Technology is not a separate segment of our lives, but it pervades and shapes our lives. It is the world in which we live. Antibiotics, sewage systems, contraceptive pills, refrigerators, and central heating systems are more than new means. Antibiotics and sewage systems changed our sense of vulnerability (limiting enormously the number of parents who had to bury their own infants). The pill changed relations between men and women and between parents and their children. Thanks to the refrigerator and the microwave we can eat whenever it suits us, individually, and each according to his or her taste, and thus the common meal as a major characteristic of the day has lost significance. Central heating has made the common room with the fireplace less important; we can each spend our time in our own rooms in the way we like. Technology makes life easier and more attractive; music is available without effort on my part, except for switching on the stereo. Such developments were considered by the philosopher Albert Borgmann in his *Technology and the Character of Contemporary Life* (1984). His concern is that while consumption has become easier, some of the more demanding but meaningful and rich experiences have been lost.

HISTORY OF TECHNOLOGY AS CULTURAL HISTORY

That technology and culture are intertwined, can be made clear by considering the history of technology as a cultural history and not just as a history of inventions (Diamond 1998; McNeil 1990). In a sense, technology has made us human, as tool making and the ability to make, maintain, and use fire intentionally are tied up with the emergence of our own species, including its social structures. In the more recent past, the transition from copper to iron about 1500 B.C.E. changed social structures, since copper was relatively rare and thereby created an elite, whereas iron was more widely available and thus more democratic but at the same time more demanding in handling, thus strengthening the emerging division of labor (smiths). Interaction between cultures had to do with trade and thus with

technologies of transport, production, and use. Agricultural technologies such as the domestication of animals, the improvement of wheat and other crops, and much later the invention of farming tools such as the plow allowed again and again a greater production with fewer workers, thus creating the opportunity for the emergence of cities.

In more recent European history, accurate time keeping and the invention of the printing press may have been major factors in the transition from the Medieval to the modern period. It has been argued that the Protestant Reformation was a consequence of the printing press. In subsequent centuries, new labor relations arose as a result of the introduction of machines. Working with machinery owned by the master, installed at premises belonging to the master, was the beginning of the factory system. A good example is the shift from home production of textiles to factories. When they shifted from water power, with locations spread out along the river, to coal as the source of energy, factories concentrated close to the coal fields. In the absence of affordable passenger transport, workers had to live nearby, in houses they had to rent from their masters. Thus, we see the rise of the major industrial cities, with social arrangements such as regular working hours and standardization.

The steam machine, accompanied by the “railway mania,” was followed by the freedom of internal combustion. What the car has done to social relations is enormous: separating for all those commuters the spheres of home and work, while diminishing the possibility for children to play safely outside. Controlling electrons in the late nineteenth century (the telephone and electric lights), with subsequent developments in the twentieth century (radio and television, computers and the Internet), added to the enormous cultural transformations of our time. As just one indication of how fast the developments are going, the very first “www” (World Wide Web)—type communication took place between two computers at CERN in Geneva on Christmas Day of 1990 (Berners Lee 2000, 30).

The way we speak about technological possibilities influences our perception of what is going on. Talking about the Internet as creating “cyberspace” suggests a new domain, free floating and remote from traditional human activities, as if we were starting all over with a new reality. This language was severely criticized by Michael Dertouzos in a 1981 essay incorporated in his book *What Will Be* (Dertouzos 1997, 11):

The press and most soothsayers tell us we must prepare ourselves to enter Cyberspace—a gleaming otherworld with new rules and majestic gadgets, full of virtual reality, intelligent agents, multimedia, and much more. Baloney! The Industrial Revolution didn’t take us into “Motorspace.” It brought motors into our lives as refrigerators that preserved our food and cars that transported us—creations that served human needs. Yes, there will be new gadgets, which will be fun to use. But the point is that the Information Marketplace will bring useful information technologies into our lives, not propel us into some science fiction universe.

Technology also influences our self-understanding: Who has never been “under stress,” feeling “huge pressure”? Do you occasionally need to “let off steam”? These are images from the steam age. We may consider ourselves as made in God’s image, but we speak of ourselves as if we were made in the image of machines. This is not exclusive for the steam age. The early radio receivers left their own traces in our language—we need to “tune in”—and computers and the Internet are modifying our vocabulary and self-understandings right now.

PHILOSOPHY OF TECHNOLOGY

One may distinguish between a focus on technology *as design*, which results in a philosophy of the process of engineering, concentrating on what the technological specialists do, and on technology *as culture*, which is a form of social philosophy, looking at the interactions between technological developments and wider culture. Carl Mitcham (1994) makes such a distinction when he treats separately “engineering philosophy of technology” and “humanities philosophy of technology.” In social philosophy of technology different visions are still possible. Ian Barbour discusses in the first chapter of his informative *Ethics in an Age of Technology* (1993) three views: technology as liberator, technology as threat, and technology as instrument of power.

When technology is seen as a liberator, we may speak of technological *optimism*. We expect of technology a positive contribution to human lives, liberating us from all kinds of burdens, increasing standards of living around the world—a longer and more healthy life, more choices for the individual, more spare time as machines take over various tedious tasks, better communication (e.g., telephone and Internet; more direct forms of democracy). There may be problems, such as environmental issues, but they can be resolved by technology. One should not idealize the past; we may want to live on a remote island for a week, but we would not like to be cut off from modern medicine when we need it.

Technology may also be seen as a *threat* to authentic human lives. Technology promotes uniformity and efficiency, undermines social networks, and increases possibilities for tracing and manipulating individual behavior. Earlier philosophies of technology, e.g., those of Lewis Mumford and Jacques Ellul, tended to be of such a pessimistic kind. More recently, the Unabomber (Chase 2000) and Bill Joy (2000) from Sun Microsystems can be mentioned as proponents of such a view. The structure of their messages is often double-sided (just as with predestination or with genetic determinism): we are unable to resist, but still we ought to resist. Technology is perceived as a force in its own right, with human behavior, individually and collectively, following in its trail. Pessimism regards not only what technological devices may do (e.g., the bomb) but also how they make us

look at problems, at reality, at fellow humans, and at ourselves in a particular way. Technology has overtaken the way we think about ends as well. Whereas optimism may be aligned with the tradition of utopian thought, we also have a dystopian tradition—there is alongside the social utopia of Thomas More’s *Utopia* (1516) the social dystopia of George Orwell’s *Animal Farm* (1948) and alongside the technological utopia of Roger Bacon’s *Nova Atlantis* (1627) the technological dystopia of Aldous Huxley’s *Brave New World* (1932). It has been argued, in my opinion convincingly, that the technological utopian dream has been far less disastrous in its consequences than the social utopian one (Achterhuis 1998), because technology always has unexpected consequences, may be used for other purposes, and leaves one free to think and explore, unlike the desire to improve behavior and attitudes, which deteriorates into one-sided control of humans.

A third view of technology is more modest, less loaded with a positive or a negative valuation. Technology may be seen as an *instrument* used by humans or as a reality *constructed* by humans, in a way that is dependent on the human context. Such a view of technology leaves the responsibility for the ways in which technology is used and even constructed to humans. This may be brought forward naively, to keep complex social discussions out of the domain of the technologists, or it may be more self-reflective, as sensitizing the engineers and users to the way technology is shaped by a particular context and urging a careful analysis of processes of design and use. Such a context may have many dimensions—legal and fiscal, as well as less visible incentives and inhibitions, desires, biases, and prejudices.

One of the differences between older, more pessimistic philosophers of technology and more recent ones is the technologies they use as prime examples. For the one it is large-scale industrial technology, with “the bomb” as its pinnacle, whereas for younger ones it is more often the distributed technologies of the Internet.

PREVIEW

Our lives will change, for better or for worse. And so will our ideas. We are not merely bystanders but may contribute to this development. This interplay of technology, self-understanding, and vision is what the essays in this thematic section are about. Artist Tom Rockwell writes not so much about our activity as about the way visual technologies mediate our self-understanding, our sense of being at home in this universe. He offers six fascinating proposals on how to experience the size scales of the universe. William LaFleur, a specialist in Japanese culture, makes clear how deeply culture shapes the way certain technological possibilities are appropriated by indicating how the Christian concept of love as *agape* created in the West a window of opportunity for a positive appreciation of organ transplants, quite distinct from the response in Japan. Whereas LaFleur

prefers the Japanese approach, Willem Drees's contribution on "Playing God? Yes!" moves within the Western sphere; he pleads for a religiously more positive appreciation of human technological activity. Philip Hefner considers our realistic and fictional visions of technology as mirrors that reflect views of human nature and human intentions, views of freedom and vulnerability. Rustum Roy argues that practice, that is, technology and religion, deserves more of our attention than such theoretical enterprises as theology and fundamental science; the rise of "integrative medicine" is for him a positive sign. Finally, psychologist John Teske describes how new technologies of communication, including the Internet, modify human relationships and identities, offering us empirical evidence on expected and unexpected interactions between technology and identity.

NOTE

1. This observation I owe to a conversation with Ron Cole-Turner some years ago. It is not implied that Ian Barbour denies the relevance of the two alternative projects indicated in the text but merely that the focus on these two widely read and deservedly appreciated titles may pass by other important issues, including the religious (rather than moral) impact of technology.

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