Technology and Religion

In order to get a perspective on the relation of technology to religion, we ought perhaps to begin by trying to imagine religion *apart from* technology. In this exercise, we imagine a worshipper apart from walls and edifices, encountering the divine without mediation by any human products. To complete the worshipper's isolation from technology, we will remove not only portable electronics, eyeglasses, watches and jewelry, but also any manufactured clothing. We will still not have attained pure isolation -- our worshipper has been immersed in technological devices all through life -- so our hypothetical worshipper must spend a prolonged interval naked in the wilderness, so as to lose some of the habits of living in a technologically-defined culture. After subsisting apart from all constructed devices for several weeks, shedding as much as possible the influences of reliance on technology, one might come optimally close to purging the residual effects of technology from one's confrontation with God.

The alternative extreme comes rather more readily to mind for most modern readers. Technology-saturated religion might involve, for instance, participating in an online worship service in an interactive digital world. Even bodily encounters in face-to-face physical environments, though, have been determined by technological circumstances: buildings small or large afford different environments for worship; instruments may enhance worship with electrically-amplified accompaniment; our personal accoutrements, even our clothing,

surround us with elements made possible through technological means. The differences among a changeable attire of a digital avatar and a space suit and a formal wool suit and a sarong fall along a wide spectrum, but they remain different examples of technological products.

The relation of religion to technology, then, embraces a great deal more than the question of whether toons can pray. If modern people worry over whether digital electronics threaten to corrupt religious experience, their grandparents worried about the intrusion of electrical light into sacred spaces, and their great-grandparents debated the permissibility of musical instruments for worship. Some ancient haruspices probably fretted over the distinction between bronze and iron implements for disemboweling sheep. The tension between technological support for religious purposes and technological impediments to religious practices goes back as far as humanity; the challenges that digital technology poses to religious thought involve issues continuous with those that have provoked believers for millennia, and also new complexities particular to the current technological environment.

Some ancient roots of technological conflicts derive from religions' divided minds over the goodness of the material world. One possible account of technology might characterize it as the optimization of human creativity and the available materials for production. Advocates of this perspective might regard technology as intrinsically neutral, capable of being used for good or evil; or might regard technology as intrinsically good, as an admirable exercise of

ingenuity. To such a perspective, the evils we might associate with technology come from outside influences, not from the products and devices themselves. On the other hand, some religions tend to regard the material world as mortal and transient at best, as delusive, a trap for the spirit (*sôma sêma*, "the body is a tomb," as the Orphics and their successors proclaimed). To such an outlook, technology's beneficent effects intensify the evilness of all material things by creating the false impression that material existence isn't so bad. One preliminary axis for assessing the relation of religion to technology, then, will try to draw a division between the pure spiritual realm and the corrupted material world. Adherents of such a perspective will either commit themselves to an ascetic renunciation of technology, or will endeavor to ascertain a dividing line between tolerable manifestations of technology (such as clothing, shelter, and food preparation) and impermissible uses of technology (entertainment, comfort, self-indulgence). The relation of technology to religion, in these cases, depends on prior reasoning about the nature of all human, mortal products.

This preliminary division of religions into "pro-material" and "anti-material" camps provides one quick-and-dirty way of sorting out questions concerning technology. At the same time, it excludes intermediate options (a world-*denying* religion might argue that technology beneficently helps remove us from bodily limitations); and even extreme examples of world-renouncing religions can make allowance for *some* manufactured goods. A clock that enables a worshipper to observe the five *adhans* at the correct intervals, for instance, might be reckoned an acceptable technological advance, since its effects promote the cause of

religiosity. Cell phones build up community, so they may be acceptable (as long as they're powered by batteries rather than the municipal power grid) -- but many modern, liberal congregations firmly reject the use of projection screens or electrically-amplified instruments in worship. Religious communities discern the positive or negative value of particular technologies by articulating criteria that assess the device in comparison to the religious community's sense of its identity (its charter texts, its defining practices, its goals, and perhaps even its entrenched habits).

Communities will judge particular technologies differently depending on the characteristics of the community and the aspects of the technology that stand out. While few college students would regard an automobile as spiritually suspect, some religious communities eschew any device that endangers the bonds of proximity and neighborliness. That which the car makes possible (an "*affordance*," to use the philosophical term) is mobility, but the community puts a higher priority on insularity. The car that *affords* a last-minute trip to a distant grocery store also *affords* a vacation among strangers in a remote exotic destination. The affordance of convenience would jeopardize the close-knit community that protects their beliefs from alien influences.

Not only are technological affordances accompanied by possibly-unwelcome side effects, but they also tend to conceal many of the effects that they foreclose. To remain with the automotive example, the car that makes it possible to rush out for pizza at a moment's notice obscures numerous other food vendors past which you might drive; from the perspective of the trip to the pizza parlor, the

others might as well not be there. The drive to pizza isolates drivers from the neighbors whose houses they would have had to walk past. And if they had walked past the house of neighbors who had just baked a pie, the neighbors might invite them in (obviating the urgency of getting a pizza, and building ties of friendship and sharing). The affordance of rapid transportation conceals the effect of cutting riders off from the environment around them.

Furthermore, the easy availability of pizza tends to bring "convenience" to the foreground as a desirable quality. Though the drive burns costly fossil fuels, pollutes the air, and contributes to global warming, the technology relegates these effects to the background; a quick drive satisfies the perceived need for pizza *now*, but it invests our hunger in the oil drilling and refining industries, in a machine that generates pollutants of air and water, and degrades the environment in ways that may destabilize the world's climate. Still further, the technology of pizza transportation conceals the labor of automotive workers, of agricultural field hands, of freight shippers, and so on. The process of preparing a pizza from homegrown tomatoes and a home-baked crust involves a radically different set of practices and effects than the process of buying commercially-prepared pizza; add in the greater likelihood of someone being injured in an traffic accident , and those differences very clearly pertain to religious identity and practice.

Somebody who adheres scrupulously to religious teaching that the whole living earth is sacred would reject automotive transportation across the board; it entails the destructive extraction of minerals and fuel from the ground,

generating toxic industrial byproducts, enabling humans to pollute the air by making needless excursions. A believer whose faith locates humanity as the crown and pinnacle of universe might argue to the contrary, that the costs of mining, fabrication, manufacturing, and powering automobiles matter much less than the well-being that automobiles create for human beings. Religions whose tenets derive from divinely-ordained doctrines would assess automobiles differently depending on the extent to which the car reflects their deities' will. The same technology can bear many different religious significances, depending on the religion in question (and the extent to which believers are willing to examine their technological investment on the basis of their professed faith).

Technology intersects with religion in at least one further way. As humans grow accustomed to the affordances (and drawbacks) of particular technologies, they tend to associate that technology with their own identity. A musician may sense her viola as an extension of her self; drivers frequently report problems they *feel* in their cars, as though the car were a prosthesis for transportation; and increasingly, computer users vest their hard drives with custodianship of their knowledge and memory. In these and countless other ways, the religious self involves not simply the bio-spiritual person (whose constituents themselves have been parsed variously into body and mind; body, soul, and spirit; *rupa*, *vedana*, *samjna*, *samskara*, and *vijnana*; and innumerable other analyses). Technology constitutes some portion of the religious believer's identity -- and if one judges by people's behavior, the technological component can take on tremendous importance.

If this seems an artificial inflation of technology into human identity, consider the case of a patient whose heart functions on the basis of an implanted pacemaker. Apart from that technological intervention, the patient would not be alive; is that vital technology truly a part of the person's identity? A person with a motor neuron disease, who relies on mechnical devices for mobility (and perhaps on electronic devices to communicate) might reasonably sense her self to include the technological prostheses that enable her to function as effectively as she does. Such circumstances, where technology has become inseparable from the capacities that express one's personhood, complicate any distinction between an organic and a technological aspect of one's personal identity. More common examples of such technologies include eyeglasses, canes and walkers and wheelchairs, prescription medications (that are frequently claimed to have the effect of "making me *myself* again"). If one acknowledges that technological appliances constitute a part of the "self" of a person who needs them to live and to function in the world, at what point does one disallow them for people who might manage without them, but who rely on them to support and enhance their organic selves' functioning?

The challenging area where humanity and technology converge and cross one another provides a reliable topic for popular media. Science fiction abounds with robots who show greater "humanity" than nominally "human" characters; Philip K. Dick's novels *Do Androids Dream of Electric Sheep?* (made into the cult classic film *Blade Runner*) and *We Can Build You* meditate on the difficulty of distinguishing human-like technology from mechanical, disaffected humanity.

Film and television characters from the Bionic Woman and Six Million Dollar Man to Inspector Gadget, from the Jetsons' maid Rosie to Arnold Schwarznegger's Terminator, all these figures play on their audience's sense that technological constructs may display the traits that ordinarily suggest personhood (and that some who appear to be ordinary, organic people more closely resemble machines). By the same token -- only from the opposite direction -- Alan Turing proposed a simple test to determine when a computer will have attained what we can plausibly call "intelligence": if a human being cannot tell the difference between a human conversation partner and a programmed computer partner, the computer can be characterized as "intelligent." Though at this writing no computer has passed a rigorous Turing test, advocates of computer intelligence suggest that in a matter of a few years, computers will be able to approximate human conversation and thinking.

The Turing test may adequately define a computer as *intelligent* (or it may not -- not all theorists have accepted this premise), but that does not resolve the pertinent *religious* questions. A computer might be able to store data, interpret and formulate responses to verbal stimuli, without sharing qualities that engage human interaction with spiritual reality; anthropoid robots might convincingly simulate human behavior without having souls, or without the capacity to recognize the illusory status of the phenomenal world. Moreover, religious observers will extend their evaluation of artificial intelligence to its entanglement with corporations, military agencies, espionage, and other sponsoring agencies. The technology of artificial intelligence does not develop in an abstract realm

isolated from political and commercial interests; rather, artificial intelligence exemplifies the way that technologies entail complexities and consequences that reach far beyond their apparent applications.

On the other hand, as scientists offer more and more neurological explanations of what had hitherto been experienced as the encounter of the human mind with transcendent reality, the very idea of a reality that transcends human capacities may evaporate. An apparently intelligent computer that reproduces electrical impulses identical to those produced by a human subject who experiences a mystical trance might represent as example of *electronic spirituality*. Since it's not clear how one could adjudicate a spiritual Turing test, the question of whether a "spiritual machine" would falsify religious claims to describe a spiritual reality will remain open indefinitely.

These deliberations take us to the dizzying precipice from which all sorts of claims about reality come into question. The chance that technology can produce the *effect* of a profound spiritual experience by electrochemical intervention, for instance, raises the disconcerting implication that religion might be nothing more than the misinterpreted by-product of physiological, technological forces. Or -- to return to cultural representations of technology -- perhaps all of the reality we perceive might turn out to be a technological construct, as in *The Matrix*. The worshipper who strips away all the traces of manufactured human products in order to attain purity in the wilderness might, in theory, be plugged into a comprehensive virtual environment (right down to the digital bacteria).

Far-fetched as such a possibility might seem, it raises on a global scale some of

the questions that concern many critics of technology. Technology's products, especially the products of digital technology, strike many observers as unreal. Digital technology may make it possible for a writer who lives in New Jersey to have frequent, spontaneous, candid conversations with a friend in Japan, but skeptical colleagues are likely to ask, "Are you *real* friends or *internet* friends?" (or "*virtual* friends"). Though my Japanese friend and I may have conversed more copiously, more deeply, and more regularly than my next-door neighbor and I have, the brute fact of physical proximity renders my relationship with a neighbor *real-er* to many observers. The question of what makes an event, an item, a person or relationship "real" bear particularly weighty consequences for religious reflection.

When religious observers call the *reality* of technology's effects into question, they frequently elide several senses of the word. A technologically-mediated relationship may not be "real" in the same way that a relationship between two physically-proximate people is "real" -- but some sort of relationship has actually been established and articulated, even if continents and wires separate the two agents. My correspondent and I are not strangers to one another, even if we have not occupied physical space near one another. An object in a digital environment (let's say, a hammer) is real, even if it will not help us pound a physical nail. In this setting, the term "unreal" serves as a shorthand expression for "not *fully* real," or "lacking some essential property." While some critics use the terms "real" and "unreal" carefully to make points relative to features that technological constructs possess or lack, others use them in a question-begging way. They argue that the

digital hammer is not *real* because it lacks a property essential to hammers, without making the case that such-and-such a property *should be* definitive of real hammers. If one stipulates that something must have weight, density, and physical extension in order that it be identified as a real hammer, one has simply excluded the very possibility of a digital hammer from the outset -- one hasn't shown that a digital "hammer" lacks reality, or explained why participants in the online environment have no trouble recognizing and naming the object as a hammer and manipulating it (within the limitations of the digital medium) as a hammer. One does not solve the problem of technological reality by defining it away.

My relationship with my friend in Japan differs from relationships based on physical proximity, but it is nonetheless real; the digitally-represented hammer differs from the hammer in my toolbox, but it is nonetheless real. The technologically-mediated instances of "relationship" and "hammer" entail particular affordances and constraints that distinguish them from that relationships and hammers to which I have access without computers and electricity (which have affordances and constraints of their own). I can communicate freely with my friend in Japan via digital technology; we can watch each other's expressions, hear our voices, interrupt and gesticulate. If we are so inclined, whether because of sentimental affection or cautious suspicion, we can record our conversation and play it back later. None of these would be possible for us, separated by thousands of miles, apart from technological mediation. On the other hand, I cannot touch him, and my seeing and hearing have been limited

by the quality of the cameras, microphones, transmission codecs, and bandwidth on which our communication depends. I would almost always prefer to conduct my friendships over steaming hot coffee, within hand-shaking range of my conversation partner; since we cannot all fit around one table at the same time, however, and since we have jobs and families that constrain our possible locations, the affordance of technologically-mediated community provides certain very positive alternatives to physical presence.

That being the case, the pertinent question for religious reflection shifts from "Are these things real?" to "How does the difference of technological mediation affect the religious significance of these relationships and objects?" This question allows us to evaluate the affordances to which technology gives ready access, while encouraging us critically to identify constraints that inhibit growth in spiritual wisdom. Moreover, this question opens retrospectively to the deliberations with which religious thinkers have endorsed or rejected technologies over the millennia. Thus exercising our capacities to draw out the best, most beneficial religious aspects of technology, and the most pernicious aspects, we will be better equipped to arrive at well-reasoned responses to challenges that religious practice encounters in a technologically-shaped environment.

The technological balance of affordances and constraints has affected religious discourses all along. Whatever the specific purposes of such monumental structures as the ancient pyramids and temples, Stonehenge, stupas, or the *moai*

of Rapa Nui, they required tremendous labor and technical ingenuity; they provide evidence for construction technology, and for the dedication of such constructions to religious purposes. Paul of Tarsus is remembered for his use of ancient technologies of transcription and transportation in communicating with the congregations he addressed, but he was aware that his letters involved constraints that his physical communication did not (and *vice versa*), as his letters preserved in the New Testament make explicit. Keeping in mind the historic persistence of the challenge of discerning the religiously appropriate uses of technology from the improper uses, we should consider a few of the salient characteristics of technology in relation to religious practice and reflection.

Imagine, for example, a digital environment in which several toons (animated digital representations of active users, often known as "avatars" -- itself a term with a strong religious heredity) gather to pray for an hour. While one might prefer that they meet in a single geographic location, the premise of an online prayer meeting seems relatively benign. The participants might, after all, have dedicated their hour to various destructive, malicious purposes. They might have squandered the time in trivially wasteful pastimes. Compared to alternative possibilities, an hour-long online prayer meeting sounds pretty good.

On the other hand, everyone involved might have spent that time in prayer off-line, saving electricity and obviating the need for computers to mediate their devotions. They might have chosen to pray in solitude, or to gather with others who lived within walking distance. Few, if any, religious teachings require (or even recommend) that far-flung worshippers join their expressions of faith by

means of telecommunications; while such an endeavor might please a deity, other expressions might do so even more.

If we stick with the premise of an online prayer group, however, does it matter how the toons are depicted? Some users design toons to look roughly as they themselves look; others deliberately choose toons that differ from their appearance. Some prefer toons that resemble animals; others prefer abstract, almost geometric representations. On one hand, it would seem as though it made little difference whether each participant's toon looked like a human being or like a jumbled pile of hat boxes. On the other hand, some religious observers might express concern if a male participant in the group selected a feminine toon. Very many religious observers would hesitate to approve a prayer meeting in which humanoid toons participated without any clothing -- although such attire would represent a prerequisite for other traditions. The appearances of digital representations, then, and their congruence with the users who control them constitute one set of criteria that might apply to online interaction.

Further, the prayer meeting might attract praise or denunciation based on the behavior of the toons. It might be reasonable to propose that their posture and gestures correspond to the posture and gestures that the users would adopt if they had all gathered in one place for prayer. The behavior of worshippers gathered in space, however, has been defined and made customary on grounds that depend on human anatomy and the effects that one's actions have on others. If a squirrel, a pile of hat-boxes, three humans, and an evanescent fog gather online for worship, it might seem fitting for the humans to remain still, perhaps

kneeling; but hatboxes and fog banks are ill-equipped to kneel, and it might be difficult to ascertain which of a squirrel's positions constitutes the equivalent of a kneel.

Perhaps such speculations seem absurd, but to an ever-increasing proportion of users, the online environment appeals to them for its affording the opportunity to adopt a body image radically different from their own physical appearance -- whether that be a matter of trying out a different gender, a body without disability or a body with a particular selected disability, or a non-human body. On the internet, everybody can be a dog if they so choose.

If we more restrictively suppose that the online gathering has a very serious religious purpose that excludes participation by atmospheric conditions and millinery containers, the next question might involve what counts as prayer in an online environment. A human most typically prays in one of three ways: by speaking, by silently thinking the words that one might otherwise speak aloud, or by adopting a wordlessly reverent frame of mind. (One could catalogue numerous other legitimate modes of prayer, but these stand out as particularly common.) Some digital environments permit aural communication; these would make a congenial setting for spoken prayers. Many online environments, however, restrict aural communication. Such settings afford full opportunity for silent prayer, but if a participant were the group's leader, and hence required to communicate with others, she or he would have to type into a chat window. Typed chat messages differ, in numerous ways, from audible verbal communication; online chat permits a much narrower range of typographic

volume and intonation, for instance. Granted that a prayer spoken by a worship leader differs from a prayer typed into a chat window, one might offer varying religious evaluations of the extent to which the typed prayer fulfills the qualities of authentic, acceptable prayer.

All these considerations serve as the path that ascends gradually to a controversial precipice. Thus far, the discussion has concerned a relatively non-specific "prayer meeting." Many religious gatherings, however, involve the purpose of effecting particular spiritual conditions. One paradigmatic religious ceremony is the sacrifice, in which something valuable or otherwise meaningful is offered as a means of appeasing divine displeasure; rites of initiation, of marriage, of communion, all may involve some degree of investment in the existential consequences of the ritual action. So instead of a "prayer meeting," we might imagine an online initiation ceremony. Such a ritual's explicit claim to change the identity of the participant brings urgent focus to the interaction of religion and technology.

The simplest analysis of the online initiation ceremony would relegate it to the status of play-acting, of no more religious importance than a movie wedding has for the actors in the film. If one compares a movie wedding, however, with the edited video recording of an "actual" wedding, one would have a hard time identifying the elements that distinguish them from one another. One can then separate the actors from the bride and groom by raising the question of intent, since the cinematic from the sacramental marriage by observing that the neither the marital actors nor the actor playing the role of the religious authority intend

actually to bind themselves to the words they speak, whereas in the religiously binding marriage, all three (and the congregation) commit themselves to the premise that the ceremony changes the nature of the couple's relationship. The criterion of intent, however, might apply every bit as much to the online ritual as to an ancient taurobolium. If the online officiant *intends* to initiate the neophyte, and if the neophyte *intends* to take up the new religious identity, the online ceremony would fulfill at least one criterion of legitimacy.

Very well, then: assuming, for the purposes of argument, that the religious officiant has been duly commissioned for the initiation rite (and that assumption itself would bear further interrogation, since one might fret about the necessity of making sure that both the online character and its offline operator be commissioned; must a toon be commissioned with religious authority if its operator has been?), and that the officiant types or speaks the words formally requisite for conducting an initiation, the weightiest remaining objection to the validity of the online initiation ritual is that the ceremony lacks the *matter* of a valid ritual action. In order to conduct a valid taurobolium, the initiate must stand under a grate over which a bull is sacrificed, such that the bull's blood gushes over the initiate. An online taurobolium might *depict* such events, but the extent to which a living creature has been slaughtered and blood applied to a religious believer remains in question. Although no *physical* animal has died or been drenched in blood, the electronic manifestations of officiant, initiate, and sacrificial victim all played their roles according to established formulas. The validity of the online initiation hangs, to a very great extent, on whether a series

of digital gestures can satisfy the religious expectation of a physical, material interaction.

The question of concrete materiality thus constitutes one decisive point of orientation for religious understanding of technology. If legitimate religious ritual requires a direct physical interaction among participants and the sacred furnishings, then online religious rituals have been ruled out from the beginning. Some traditions will insist on material agency in religious action, on such grounds as the Christian teaching that the incarnation of Jesus entails a divine affirmation of materiality, or the God of Israel's characterization of all creation as very good. Thus, the Roman Catholic Church has ruled that "the incarnational reality of the sacraments" prevents any mode of sacramental action online. [Pontifical Council for Social Communications, "The Church and the Internet," promulgated February 28, 2002]. Protestant Christian traditions that define liturgical actions and effects differently might not see the grounds for rejecting the possibility of an online observation of the Lord's Supper. Still other traditions may allow that non-physical interaction satisfies all the decisive characteristics of valid religious practice, whether because the material world stands opposed to everything spiritual, or perhaps because physical and digital existence are equally illusory.

The internet affords interaction among digital bodies, but those bodies lack important qualities of physical bodies: density, palpable texture, and -- especially -- depth. Users have become accustomed to construing digital media as three-dimensional; the conventional expression "cyberspace" itself implies a spatiality

to digital interaction. The habit of interpreting online communication as spatial, however, masks the two-dimensionality of the computer interface. While sophisticated graphic techniques can generate simulated textures, lighting, and gravitational models, the screen remains a smooth, flat, field of representation. Screen-based communication -- no matter how advanced -- affords its conveniences at the expense of the dimension of depth that incalculably enriches human encounters with our physical environment.

Some critics pursue this line of criticism further, advancing the claim that the literal flatness of the online environment entails a concomitant superficiality in online communication. Such observations gain credibility from the ratio of triviality to profundity in online discourse. Since it has become so very easy for anyone to publish any whim, opinion, prejudice, or general nonsense online, the whimsical, opinionated, prejudiced, and nonsensical pages tend to prevail over the carefully considered, profound pages (though the extent to which this differentiates the Web from a bookstore franchise might be debated). Further, the pattern of affordance and constraint amplifies this tendency. The online environment affords instant access to broadcast publication and to innumerable sources of information, but that "instant" conceals all the resources that go into developing and sustaining the internet itself, the physical computer, the operating system and protocols and browsing software, the costs for disposing of the waste these processes generate, and the uneven distribution of access to all the benefits that the net affords. When one compares the benefit of enabling a superficial ignoramus to post inconsequential maunderings to all the costs that

make such a publication possible, the internet's lack of depth seems undeniable.

The prospects for digital technology aren't quite so bleak, though. The two-dimensional space of online interaction has features unlike any flat thing that most users have dealt with before. For one thing, the two dimensions of screenspace are infinite. The screens themselves show only small amounts of online information at any given time, but the information that one *might* display abounds beyond the screen, and it has been growing at a precipitous rate. Moreover, even if we regard online interaction as flat rather than spatial, the operation of hyperlinks shift our screen directly from one page to another without passing through intervening space or pages. These hyperlinks constitute the flat environment of the internet as a mode of flatness unlike any other flatness familiar to users. Moreover, online technology is not flatly two-dimensional; the internet interacts with *time* in distinctive ways. Ordinary discourse takes place in the transient flux of passing time, but digitally-mediated interaction can always be recorded and replayed. The internet doesn't remember absolutely everything that's ever happened online, but it remembers a great deal more than one can readily imagine (as anyone can testify who has been tripped up by embarrassing details retrieved from web archives). The moment of an online session passes, but the data stream endures. One might plausibly argue that the infinite hyperlinked flatness of online interaction and the availability of past interactions compensate to a very great degree for the absence of depth. What the digital environment lacks in the traditional "third dimension" of depth, it supplies by abounding in other dimensions.

These different dimensions in digital technology seem mysterious and unnatural at first, less because of their intrinsic characteristics than because they have not yet become familiar. Unfamiliar technologies partake of the arcane, the dangerous, and the magical -- for the very good reason that they are indeed accessible only to an initiated few, and they can be very risky (even after they've become commonplace, as automobile wrecks show). Technologies whose workings surpass their users' understanding are, in effect, magical; and since the distinction between magic and religion is typically contested by various observers, we might draw this part of the chapter to a close by observing that if we compare people who rely on magic to people who rely on technology that they don't understand, we may find that unsettling similarities in their behavior, their explanations for their practices, their feelings, and the effect of technology or magic or religion on the rest of their lives. If, as Arthur C. Clarke said, "any sufficiently advanced technology is indistinguishable from magic," and if magic and religion interpenetrate one another, then whatever we mean by "advanced technology" may draw *everyone* -- users and observers, atheists and believers -- into a condition indistinguishable from something very much like religion.

In summary, the advancing edge of technology in the twenty-first century precipitates a new generation of problems in the relation of technology to religion, but each technological transition from fire and wheels onward has generated religious challenges of its own. The complexities of pinning digital

technology down for evaluation appropriately reflect the complex field at the intersection of technological productivity and religious practice. Religious leaders and students of religion do not have access to a simple test for technological legitimacy; whatever ethos they adopt will inevitably entail complications and frustrations.

Thus, the soundest approaches to the interaction of technology and religion will avoid aye-or-nay assessments that paper over complexities. A congregation whose ethos embraces modernity in its technological magnificence owes an account of what that implies about the ecological impact of consumer electronics, and about dependence on fossil fuels for energy and materials. Such a faith community will have to decide whether they are willing to write off potential adherents who can't afford the latest hard- and software, or who can't figure out how to use it, or who object to the spiritual ramifications of investing so heavily in technological fashions.

By the same token, communities that forgo participation owe an account of what makes some technologies acceptable and others unacceptable. Why draw the line so as to include electric light and audio amplification, but exclude projecting hymn texts and illustrative images on overhead screens? If they opt for preferential solidarity with people outside the charmed circle of advanced technology, they will want to work out the basis of their relation, if any, to the increasingly numerous denizens of the digital environment.

In cases where religious traditions have not formulated authoritative rulings (or where those rulings have come under critical reconsideration), one may look

to the relation of affordances and constraints that a technology produces as a criterion. A Roman Catholic can approve of the construction of a physical space that affords the conditions for anonymous confession of sins and for absolution by an unseen priest who has been physically separated from the penitent; a Buddhist can approve the construction of prayer wheels that multiply a believer's repetitions of sacred expressions. One can submit emailed prayers to be inserted in the Western Wall of Jerusalem's temple mount, or a devotee can arrange via the Web for *pujas* be offered to Meenakshi by temple priests. Musical instruments enhance an auditors sense of harmony and help guide and reinforce congregational singing. The beneficial spiritual result of such technologies sanctifies their role in religious practice, although one might identify constraints that militate against their acceptance. The organ was unwelcome in churches well into the second millennium, and some Christian bodies still forbid any instrumental music in worship; some musical instruments were associated with licentious occasions, and irregularly-tuned instruments disrupt congregational music more than they enhance it. The confessional booth affords the freedom to confess sins without fear of being identified, but it precludes a confessor's visual observation of the penitent for signs of sincerity. Religious traditions rely on some technologies and repudiate others; they have always done so, and will presumably continue to do so.

The question of technology and religion, then, should be refined to address several more specific questions. First, in what terms does the ethos of a particular religion evaluate the products of human ingenuity? In other words, a religious

assessment of technology will from develop in congruence to fundamental attitudes toward material existence and human achievement. Are material products a snare and delusion? Or are they a reflection of a distinctive human capacity for constructive innovation?

The primary attitude toward technology then confronts particular technologies in relation to particular tenets of religion. Does the importance of a penitent's anonymity warrant authorizing online sacramental confession and absolution? Does the importance of a devotee's making a pilgrimage warrant allowing pilgrimage-by-proxy? Circumstance intersects praxis in ways that sometimes persuades religious leaders to allow unexpected intrusions of technology, and sometimes provokes them to exclude disruptive technologies. In each such case, the more general guidelines for envisioning technology encounter the religious community's specific needs, theoretical consistency encounters practical necessity, and believers reach some accommodation (so that a tradition that forbids taking animals' lives redefines fish or small mammals as a form of vegetable life). When examined closely, there is no single question of "technology and religion," but a myriad of related questions, each inflected differently by different traditions and different applications of technology. While each religious group will arrive at its own determination, however, there is none that is not under the necessity of articulating its ongoing interaction with technology.

Finally, both general and particular evaluations of technology should be compared to the power of a broader culture's influence on the religious tradition. Religious authority sometimes simply accepts developments from its

surrounding culture, and sometimes pushes back against unwelcome encroachment. Technological change sometimes affects religion in ways that seem at first entirely benign, but that entail more ambiguous effects. The use of electronic amplification, to take one example, has profoundly altered the practice of liturgical communication. When a religious tradition confronts a particular technological development, the authorities are acceding to (or rejecting) both that technology and the cultural currents that pushed the technology to prominence. The meanings of culture, technology, and religion interweave so pervasively that they defy tidy segregation, but the rhetoric of religious evaluation sometimes reveals a stronger reliance on "what everyone knows" or "what we all use" than on distinctly religious reasoning.

The hypothetical devotee of the opening paragraph will try in vain to eradicate the traces that technology has left on her or his life, and the enthusiastic cyborg will not escape the persistent demands and impulses of organic, psychological, spiritual existence. While we stand to learn from pioneers who seek revelatory wisdom at the extreme limits of technological self-denial as also from bleeding-edge early adopters who plumb the soul of digital avatars, we may learn more by observing closely the ways that religious teachers and practitioners negotiate the complications that lie between these extremes. In reasoning through the affordances and constraints, the benefits and drawbacks of particular technologies, believers bring to bear their sense of what is most important and most decisive in their faith.

Discussion questions -- things such as

What are some obvious and subtle ways that technology impinges on the practice of religion?

Select a technological artifact from your daily life. What does it afford? What effects does it obscure?

How does the claim that the perceived world is a technologically-sustained illusion compare to claims about existence and reality from various religious ways of life?

In what ways do technologically-mediated relationships fall short of relationships based on physical proximity? In what ways do they afford positive relationships that physical proximity does not?

The text of this chapter was written online, with collaborative comments from readers around the world; what difference does this make relative to its claims?

Recommended Reading:

Albert Borgmann, *Power Failure*
Arthur C. Clarke, "The Nine Billion Names of God" and "Hazards of Prophecy: The Failure of Imagination"
Philip K. Dick, *Do Andriods Dream of Electric Sheep?* and *We Can Build You*
Jacques Ellul, *The Technological Society*
Donna Haraway, *Modest Witness@Second Millenium. FemaleMan Meets OncoMouse: Feminism and Technoscience*
Martin Heidegger, "The Question Concerning Technology"
Ray Kurzweil, *The Age of Spiritual Machines*
Marshall McLuhan, *Understanding Media*
Quentin Schulze, *Habits of the High-Tech Heart*