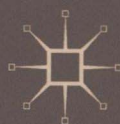# TECHNOLOGY AND CULTURAL TECTONICS
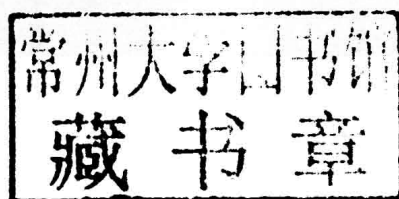
SHIFTING VALUES AND MEANINGS

F. ALLAN HANSON
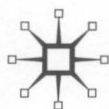
Technology and Cultural Tectonics

Shifting Values and Meanings

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palgrave
macmillan

TECHNOLOGY AND CULTURAL TECTONICS

To Louise,
who agitated the follicles

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written, she read early and subsequent drafts of every chapter and commented extensively on them. Our constant discussions have been instrumental to the current form of the book. Louise is my frankest critic and my fiercest advocate. Where I would be without her I do not know.

Contents

Chapter 1

The Technological Society

Once upon a time sexual relations were necessary for the birth of a child. Back then the gender and state of health of a baby were known only after it emerged from the womb. The movements of a criminal suspect, a wayward spouse, or an errant teenager could be detected only by physically following them. It was even the case that, with the exception of fathers who died during the nine months between impregnation and birth, only living persons could have children.

Today a bewildering array of new technologies has rendered all of this hopelessly obsolete. A variety of assisted reproductive technologies—donor insemination, surrogacy, in vitro fertilization (IVF)—have made sex optional and tens of thousands of babies are born without it. Prenatal testing technologies such as ultrasound, amniocentesis, and chorionic villus sampling routinely report on the gender of a fetus and can identify impairments well before birth. Other tests reveal hidden details about an individual's state of health, the likelihood of contracting a certain disease in the future, and whether the individual has used controlled substances. Devices concealed in automobiles relay information about speed and location to remote computers through the global positioning system. Potential sex offenders are identified by the presence of child pornography on their computers, and are lured toward arrest by computer-mediated communications. Warrants for criminal suspects are issued on the basis of nothing but a string of DNA. Frozen gametes and embryos can be implanted in a surrogate, to be born months or years after the genetic parents have died.

Varied as they are, however, this study of the cultural impact of new technologies is guided and unified by three qualities that they all have in common. First, as applications of scientific knowledge, all of them provide power to do things that previously could not be done.

Second, the increased human control that comes with various technologies leads to disarticulation. The wholeness or integrity of persons and things fades as they come to be known and treated in terms of those particular parts that are revealed and subject to manipulation by technology. And third, the twin features of increased power and disarticulation often set up tensions and clashes within the overall framework of conventional cultural values, meanings, and expectations. Our primary objectives are to understand how these tensions and clashes are generated, and how (or if) they are resolved.

Jacques Ellul, a premier analyst of the social consequences of technology, highlights the advance of human control into regions previously impervious to it, and he views the process with misgivings. It diminishes the ineffable quality—the mystery—in life, leaving our experience of it more clearly delineated but poorer and grayer for that very reason (Ellul 1964:141–142, see also Gendreau 1999).

Although Ellul has an excellent insight, the way he articulates it is not entirely satisfactory. It implies a tipping point, prior to which there is a sufficient level of mystery and after which it is lost. Perhaps more reasonable is to recognize that technology has been advancing ever since our Paleolithic ancestors made the first hand axes, and insofar as it lessens the mysteries of life, that process has been going on through all of human history. Instead of a tipping point there has been a constant evolution of culture as it has accommodated to new technologies that bring events formerly shrouded in mystery into the light of inspection and control. A useful way to think about this is with Jean Baudrillard's concept of pornography. Concealing layers are successively stripped away in a pornographic dance, book, or film, laying the subject increasingly naked and available for direct inspection (Baudrillard 1990:146–148). So it is with the world as it is progressively revealed to us through science and technology.

Baudrillard's simile may be raw, but if we can get beyond its sordid connotations, I think it is closer to the mark than Ellul's formulation. What the latter calls dispelling mystery is a process of cultural change in concepts and values associated with knowledge, trust, hope, and desire. This certainly may involve the loss of something cherished, but not necessarily. Instead, the change may be the emergence of a new optimism and sense of confidence as it becomes possible to do highly desirable things that were previously foreclosed. An outstanding example is IVF, which enables people who are otherwise unable to satisfy their wish to have children.

Baudrillard's concept of pornography also leads directly to the second distinctive feature of technologies highlighted here: the

disarticulation of the person. Individuals taken as wholes are entirely foreign to pornography. The object of pornography is of interest exclusively for the particular anatomical or behavioral qualities that satisfy the consumer's desire. Any elements of larger personhood— temperament, interests, convictions, values—are utterly irrelevant (Baudrillard 1990:150–151).

Technology has a similar fragmenting effect. The drive to maximum efficiency in industrial settings through the systematic use of time and motion studies, known as Taylorism, reduced the laborer to precisely specified movements that were required for the proper completion of any task. Thus the "science of shoveling" mandates the angle and distance of the forward and backward swings. Through meticulous research Taylorism's founder, Frederick Taylor, determined that a laborer could move the greatest amount of material in a day when his loaded shovel weighed 21 pounds. This led to providing an array of different shovels for different tasks depending on what was being shoveled: smaller ones for iron ore and larger ones for ashes (Taylor 1911:65–69).

A similar breaking down of wholes into constituent parts characterizes the technologies to be examined here. The formerly unitary role of mother is split today by assisted reproductive technologies such as surrogacy into distinct roles that may be fulfilled by different women. Prenatal tests transform certain fetuses into nothing more than a case of Down syndrome, cystic fibrosis, or some other impairment. All this contrasts sharply with historical views of the person as fully shaped, be it made in the image of God, a Renaissance man with infinite potential, a free citizen, or a self-made entrepreneur.

As science and technology advance they replace sectors of ignorance or the ineffable with knowledge. A particularly clear example is prenatal tests, which provide information about the condition of a fetus that was previously unavailable. It must be recognized, however, this is much more complex than just adding to our supply of objective facts. As Foucault (1980) has demonstrated, knowledge is intimately associated with power in the sense that new forms of knowledge commonly bring with them new expectations for how people should behave, how they should be evaluated, or what might be done about them. One example of such power is that when prenatal tests reveal the presence of an abnormality, people often feel compelled to terminate the pregnancy.

Of greatest interest here is how the increased power and personal disarticulation produced by technology influences the overall framework of values, symbols, meanings, and customs that constitute culture. The most prescient contribution here is Marshall McLuhan's

famous aphorism "the medium is the message" (1964). This means that the outstanding effect of a technology is not its specific content, but how it transforms the context for the conveyance of any content. The message of the telegraph is not that grandma has died or niece Jennie is planning to marry, but that those and any number of other communications can be conveyed over great distances instantaneously. Electricity, perhaps McLuhan's favorite example of a technological medium, has no specific content at all (other than perhaps a name or phrase written in neon lights). But its message is an overwhelming array of previously impossible functions such as illuminating nighttime stadium events, enabling cars to drive at night, powering computers, cell phones, air conditioning units, and that list barely scratches the surface.

The messages of new technologies present a challenge to culture. Sometimes they clash and collide with deeply established values and assumptions, setting off cultural shockwaves analogous to the earthquakes produced by collisions between the tectonic plates that form the earth's crust. The culture adjusts, but before that is achieved the technologies in question may provoke bewilderment, anxiety, opposition, and turmoil. The technologically enabled situations listed at the outset are presently at different stages in the adjustment process. Probably IVF has been most fully incorporated while the possibility of dead people having children has farthest to go. To understand how the messages of new technologies confront established cultural assumptions and expectations, and how that confrontation is resolved, is the primary objective of this book.

How Culture Works

As with any system of interdependent parts, change in some of the parts in a culture generates change in other parts, especially those most closely related to them. This study aims to identify how particular technologies bring about changes in certain cultural institutions, and to trace the rippling effects of those changes on other institutions in the larger culture. As an abbreviated illustration, the technology of IVF makes reproduction possible without sexual intercourse. That changes the meaning of reproduction, which in turn changes the meanings associated with cultural institutions such as conjugal male-female relationships and marriage. The chapters that follow trace this and other ramifying changes in cultural institutions brought about by new technologies to demonstrate how this impacts some of the most important elements of our way of life.

An ordered social life requires predictability. To get along successfully together, people must share some consensus about the meaning of events and objects. If I think the thing before us is a hammer, to be used for driving in nails, and you think it is a scissor, to be used for cutting, there is no common ground upon which we can agree about what to do with it. Equally essential is predictability of the behavior of others. If someone can be trusted to hew reasonably closely to the rules of expected behavior, we have sufficient confidence to proceed with the interaction. But if someone's behavior is entirely erratic, as is the case with some psychotics, no fruitful or sustained interaction with that person is possible.

The basis for a workable level of predictability is culture: the shared set of assumptions about the nature of reality, the kind of human relationships that exist, the proper behavior to adopt in them, and so on. Predictability requires sufficient cultural consensus about these matters to maintain an adequate degree of stability over time. That is to say, at bottom, culture is conservative.

So far as technology is concerned, cultural conservatism is visible in at least two ways. For one, no technological innovation will be accepted unless it makes some kind of sense in terms of the understandings and possibilities of existing culture. This is the familiar notion that the time must be right for a new invention. If there is no fit, innovations will not be adopted until long after they were originally proposed. Leonardo da Vinci famously drew designs for a helicopter, an automobile, and other machines that could not be realized in his time. Charles E. Fritts filed a patent in 1890 for sound on film, but it had no application for 30 years. In 1926 J. E. Lilianfeld patented a kind of transistor that had no commercial application until the development of silicon technology decades later (Hook 2002:12). On the other hand, when the time is right, an invention is often produced almost simultaneously by different people working independently. The anthropologist A. L. Kroeber cites, among other examples, more than five candidates for the invention of the steamboat, four for anesthetics, and two for the telegraph (1917:200).

The other and more important conservative quality of new technologies is found in the reasons people have for using them. Far from novel, their motivations are to achieve ends that are well established by their culture. The automobile enabled more rapid realization of the preexisting goal of movement from one place to another. The telephone is based on the familiar experience of verbal communication; it just extends it over great distances. Similarly, the more recent technologies we will study achieve widely held and approved objectives more

efficiently, or overcome impediments to achieving them, such as diagnosing disease, having healthy children, and identifying criminals.

But if the goals are familiar, the means for achieving them are not. As a result, technological innovations represent the greatest threat that exists to cultural conservatism. The novel ways they introduce for achieving familiar goals often bring unintended consequences that are perplexing and upsetting. The above example of the consequences of assisted reproductive technologies for sexual relations and the institution of marriage is one case in point. We will seek to determine just what the disturbing implications of these technologies are, what resistance they foment, and how they become accommodated through mutual adjustments in the technology and in cultural understandings and values.

Given the basically conservative nature of both people and culture, the standard response when new, technologically induced circumstances arise is to try to assimilate them to existing cultural patterns. In some cases, however, the divergence from the familiar may be so great that such accommodation is virtually impossible. One example to be discussed in chapter 3 is how to conceptualize the relationship of an anonymous sperm donor with the women who have become pregnant with his sperm and with their children. The understandings and expectations built into the notion of "husband" or "partner" or "father" are so remote from this situation that some other concept must be invented. Just what that concept should be, however, is by no means clear. Again and again we will encounter situations where people attempt to assimilate new relationships and arrangements spawned by technological developments to familiar ones. An important part of the analysis will be to explore what models or templates they attempt to use, how well they work, and what happens when they hardly work at all.

A Place for the Law

An important source of information in many of the case studies to follow will be the law. Here the cultural values challenged by new technologies are unusually explicit, being recorded in statutes, the Bill of Rights, or the common law's precedent of previous cases. Cases brought before the courts cannot be left unresolved and, again, that resolution is thoroughly and explicitly set out in legal briefs and judicial opinions. Thus the social and cultural issues raised by these technologies, and the degree to which they can be assimilated to existing understandings, are sharply framed in the efforts of the law to grapple with them.