Democracy and Technology

Richard E. Sclove

New York: Guilford Press, 1995.

CHAPTER ONE
SPANISH WATERS, AMISH FARMING
Two Parables of Modernity?

I wish to...persuade those who are concerned with maintaining democratic institutions to see that their constructive efforts must include technology itself. --Lewis Mumford[1]

During the early 1970s, running water was installed in the houses of Ibieca, a small village in northeast Spain. With pipes running directly to their homes, Ibiecans no longer had to fetch water from the village fountain. Families gradually purchased washing machines, and women stopped gathering to scrub laundry by hand at the village washbasin.

Arduous tasks were rendered technologically superfluous, but village social life unexpectedly changed. The public fountain and washbasin, once scenes of vigorous social interaction, became nearly deserted. Men began losing their sense of familiarity with the children and donkeys that once helped them haul water. Women stopped congregating at the washbasin to intermix scrubbing with politically empowering gossip about men and village life. In hindsight the installation of running water helped break down the Ibiecans' strong bonds--with one another, with their animals, and with the land--that had knitted them together as a community. [2]

Is this a parable for our time? Like Ibiecans, we acquiesce in seemingly innocuous technological changes. Unlike many Ibiecans, we celebrate these changes: whiter teeth, lower cost, or else greater convenience, abundance, safety, or amusement. The automobile, for example, embodies a distinctively American conception of freedom. People speed through city and countryside toward adventure and opportunity. However the results of our many individual decisions to purchase automobiles also include gridlock, air pollution, suburban sprawl, the decline of downtown centers, and dependence on insecure sources of imported oil. Did we choose these results? Do they express people's freedom or perhaps, ironically, limit it?

Of course, the automobile's adverse effects were never intended, any more than Ibiecans hoped to dissolve their former way of life. Ibiecans did not foresee the extent to which earning

money to own a washing machine would mean becoming enmeshed in the external cash economy. They did not plan to remake themselves into wage laborers and consumers nor did they plan to gradually transform their town into the suburban appendage of an encroaching urban center. For many Ibiecans, the loss and pain proved profound. One farmer, compelled to sell his beloved but now useless donkey, withered into permanent silence. For Ibiecans, as for everyone else, the combined result of many individual technological choices is often not what anyone anticipated.

Modern industrial nations have, of course, outdone rural villages in evolving social processes for coping with technologies' unwanted effects. On the one hand, a modest scholarly industry, steeped in economic ideas, stumps for policies to accelerate technological innovation[3]. The objective is to enhance national economic growth, productivity, and international competitiveness, based on the assumption that as long as an innovation sells profitably, it is a social blessing. But newspapers also grant front page coverage to controversial technological developments--to industrial disasters or to unsettling advances in genetic engineering, automation, and weaponry. The United States has an Environmental Protection Agency to regulate technologies' impact o n the environment. The Office of Technology Assessment forecasts technological trends, the Occupational Safety and Health Administration is responsible for worker safety, the Defense Department supports innovations in military hardware, Congress provides oversight and legislative initiatives, the courts offer redress for grievances, and various private and nonprofit groups strive to advance their views of the public good.

But here, too, there is something missing, something so vast that it is easy to overlook: virtually the entire range of technologies' psychological, cultural, and political effects[4]. For example, when it comes to technology, newspapers, public-interest groups, corporate leaders, and governmental bodies normally address one or more of the following four questions: Is the technology at issue technically workable? What are its economic costs and benefits, and how are they distributed? What are the associated environmental, health, and safety risks? Are there implications for national security?

These are, undeniably, important questions. Yet as a group they are incomplete, failing to grasp technologies' profound role in altering the course of history and the texture of daily life. Consider the difference it would have made had our forebears learned to pose these questions--and then act responsibly on the answers--throughout the first century-and-a-half of industrialization. The world today would be somewhat cleaner and safer; thus, in certain significant respects, we would be better off. However, our societies would still have done nothing directly to comprehend, not to mention to guide or perhaps alter or avert,such major, technologically influenced developments as establishing the home as a place where a woman labored alone, the birth of the nuclear family, changing sexual mores, suburbanization, the development of public schools and romanticized childhood, the withering of craftsmanship, the shift from an agrarian/cycli experience of time to a linear one, the creation of hierarchically managed national and transnational corporations, or the evolution of modern political parties[5].

In short, with attention confined strictly to these four questions, the momentous cultural developments associated with the Industrial Revolution would have come and gone without anyone noticing. Yet these questions, which are incapable even of distinguishing actions that perpetuate an agrarian social order from those promoting revolutionary political and cultural transformation, are the very questions now imagined adequate to guide us wisely into the next century.

This complicity in technological decisions that haphazardly uproot established ways of life is as perplexing as discovering a family that shared its home with a giant, seizure-prone elephant and yet never discussed--somehow did not even notice--the beast' s pervasive influence on every facet of their lives. It is even as though everyone in a nation were to gather together nightly in their dreams--assemble solemnly in a glistening moonlit glade--and there debate and ratify a new Constitution. Awakening afterwards with no memory of what had passed, they nonetheless mysteriously comply with the nocturnally revolutionized document in its every word and letter. Such a world, in which unconscious collective actions govern waking reality, is the world that now exists[6]. It is the modern technological world that we have all helped create.

Could it be otherwise? Are the social effects of technology truly so complex that no one could possibly foresee them, much less act cogently to guide them? Not necessarily. To demonstrate this, one can contrast both Ibiza's and contemporary American society's style of technological politics with that of an alternative social order.

The Old Order Amish immigrated to the United States during the 18th and 19th centuries. With established communities in some 20 American states, their U.S. population is now over 100,000 and growing. To the outside society they are known as a religious subculture distinguished by old-fashioned clothing, horse-and-buggy transport, and an antiquated lifestyle that rejects modern technologies. The actual story is more complex and instructive.

The Amish are a pragmatic people who accept the reality of social change and do not reject all modern technology. Hence, theirs is not a primitive folk culture that lacks awareness of alternative possibilities. On the contrary, they represent a society that is conscious of the larger world in which it is immersed and that self-consciously guides its evolution[7]. The Amish have, for example, repeatedly adopted innovations in farming technology, sometimes sooner than their non-Amish neighbors. They will hitch a ride in a non-Amish car, charter a bus and driver, or perform sums using a battery-powered hand calculator. They are also skilled technological innovators who have been known, for instance, to devise a system in which a diesel tractor powers an air compressor that, in turn, pumps refined fuel to a set of indoor lighting lamps. On the other hand, most Amish communities forbid personal ownership of automobiles, telephones, radios, or televisions; the use of tractors in the field; and electric hook-ups from power company grids to private homes and buildings.

To a casual observer, the resulting pattern of exclusions and adoptions seems capricious. However, the pattern is the result of a remarkably sophisticated style of technological politics. The exact decision making process varies somewhat from one Amish community to the next

and from one decision to the next. In essence, each local Amish community--acting collectively rather than as a set of discrete individuals--asks itself how the adoption of a technology would affect the community as a whole. Innovations that would tend, on balance, to preserve the community, its religion, and its harmonious relation with nature are permitted. Those that appear to threaten the community and its values are rejected. In either case, the decision is reached through a process of public discussion and democratic ratification[8].

"What would be the impact on our desired form of society if individuals, or the community, were to adopt one set of technologies rather than another?" The villagers of Ibieca had no tradition of asking such questions or even an established forum for making the attempt. Nor do we. But isn't it striking that the Amish, who prohibit formal schooling past the eighth grade, have nevertheless managed for several centuries to make technological choices that shrewdly advance their chosen cultural and religious commitments? In this regard, their technological acumen surpasses that of the villagers of Ibieca as well as the combined capability of modern nations' scientific, commercial, and policy making establishments.

Reconsider, then, our society's ineptness at guiding technological change. Might it have less to do with modern technological complexity than with a failure to evolve institutions through which we could begin to act upon appropriate questions? The potential list of neglected questions concerning technology is long. It could encompass the entire domain of technologies' social aspect--the political, cultural, sociological, psychological and spiritual. Moreover, one might need to integrate such issues with others more familiar--matters of technical feasibility, economics, environment, health, and defense. Finally, it might be necessary to consider not only the social dimensions and impacts associated with single technologies but also the combined effect s that emerge from a complex of coexisting technologies.

Were we to do this it might emerge that technologies, everyday tools and helpers, are implicated in a plethora of modern ills: loneliness, narcissism, disempowerment, insecurity, stress, and alienation. Stated more concretely, technology appears to contribute indirectly to problems ranging from urban poverty to teenage pregnancy, child abuse, racism, continued subordination of women, militarism, the marginalization of the elderly, high crime rates, and drug abuse. Ultimately, technology is implicated in perpetuating antidemocratic power relations and in eroding social contexts for developing and expressing citizenship.

Technology is not the cause of such ills, but it contributes to all of them. To continue neglecting technology's broad social dimensions virtually guarantees remaining ineffectual in addressing our deepest social problems and sources of personal malaise. It will not do, moreover, to imagine that other kinds of social reforms--be they conservative or radical--must precede significant reform in the technological domain. "First transform society, then tackle technology." That refrain overlooks ways that existing technologies help constitute the present social order and so constrain social transformation. Until technological concerns are fully integrated into programs of social transformation, such programs will be stunted or abortive.

Several qualifications are in order. First, insofar as technology is not the sole contributor to social problems, one ought not to shift attention to technology at the expense of other

contributing factors. Concentrated economic power, poverty, racism, sexism, ethnic intolerance, and so on matter too; it is thus vital to explore the relationship between technology and these other factors.

Second, it is wrong to conclude that "technology is evil; let's get rid of it." We can no more eliminate technology than cease to be human. However, third, neither must we merely adapt compliantly to whatever technologies happen along. An adequate approach to technology must involve procedures for addressing a broader, more appropriate set of questions. However, these must lead to the possibility of eliciting alternative technologies more compatible with the kind of society or communities in which people wish to live.

Among the panoply of questions concerning technology that escape attention, perhaps the most important one involves how technology bears on democracy. Democracy provides the precondition for being able to decide fairly and effectively what further questions to ask and what actions to take in light of the answers. Thus if technologies were more compatible with one or another vigorous variant of democracy, we might be better positioned to debate what other issues most urgently require attention. Conversely, it is vital to explore the extent to which the failure to come to terms with technologies' political ramifications represents an expression of antidemocratic social power formations, as embodied partly in current technologies themselves.

For a preliminary illustration of the importance of seeking compatibility between technology and democracy, turn again to the Amish. The Old Order Amish ask themselves how a particular set of technologies would affect their community. However, it happen s that their communities already embody a relatively robust species of local, democratic self-governance[9]. Hence, implicit in the question of how to preserve their community is the crucial subsidiary concern that any permitted technologies must be compatible with preserving the Amish community's already-democratic nature.

The Amish have, for instance, prohibited private ownership of automobiles. This is in part to inhibit a dispersed settlement pattern that would interfere with Amish-style extended families and neighborliness[10]. Such neighborliness is pleasurable and also necessary to economic mutuality and to perpetuating Amish culture. Furthermore, it contributes to a kind of mutual understanding, social commitment, and routine of gathering that, in turn, facilitate participatory and consensual democratic decision making. Were the Amish to purchase automobiles, they would be jeopardizing their ability to continue governing themselves democratically with respect to technology and otherwise.

This does not mean that everyone should become Amish or impulsively discard their automobiles. Nor should one overlook features, such as smallness and cultural homogeneity, that distinguish Amish society from the U.S. mainstream. It is doubtless easier for the Amish to achieve consensual decisions than it would be for the citizens of a large, culturally diverse city. But for immediate purposes, the problem of achieving consensual answers is of much less concern than our failure even to begin debating crucial questions--in this case, concerning technologies' political and cultural dimensions.

In short, the "nuts and bolts of democracy"--ordinarily a metaphor denoting concern with the nitty-gritty of democratic politics--must grow to encompass a literal concern with nuts and bolts. Currently, there are few institutions through which citizens c an become critically engaged with choosing or designing technologies. Should we commit themselves to evolving such institutions and to adopting only technologies compatible with democracy? Until we do, I shall argue, there can be no democracy worthy of the name.

NOTES TO CHAPTER ONE

1. Lewis Mumford (1964). "Authoritarian and Democratic Technics." *Technology and Culture*, 5, no. 1 (Winter): 1-8. p. 7.

2. Susan Friend Harding (1984). *Remaking Ibieca: Rural Life in Aragon under Franco.* Chapel Hill: University of North Carolina Press.

3. See, for example, Committee on Industrial Support for R&D, National Science Board. 1992. *The Competitive Strength of U.S. Industrial Science and Technology: Strategic Issues*. Washington, DC: National Science Board. and Lewis M. Branscomb (ed.) (1993). *Empowering Technology: Implementing a U.S. Strategy*. Cambridge, MA: MIT Press.

4. I use the word "technology" broadly to encompass material artifacts (including buildings) and the social processes and knowledge accompanying their development and use. I use "technologies" (plural) to connote the disparate social effects associated with different artifacts and practices.

5. The technological dimensions of some of these transformations are discussed in Joel Colton and Stuart Bruchey, eds., (1987). *Technology, the Economy, and Society: The American Experience*. New York: Columbia University Press.

6.See also Langdon Winner (1986). *The Whale and the Reactor: A Search for Limits in an Age of High Technology*. Chicago: University of Chicago Press. p. 10

7. Marc A. Olshan (1981). "Modernity, the Folk Society, and the Old Order Amish: An Alternative Interpretation." *Rural Sociology*, 46, no. 2(Summer): 297-309

8.Olshan (1981) and Donald B. Kraybill (1989). *The Riddle of Amish Culture*. Baltimore: Johns Hopkins University Press. Eric Brende's generous readiness to share his essays-in-progress and his personal experience living with an Amish family also greatly helped my understanding of Amish technological decision making.

9. Amish community decisions are made collectively, normally following the weekly religious service. Religious-political leaders are nominated by adult community members and chosen by lot. Amish society is not fully egalitarian sexually; women participate politically but are ineligible for formal leadership positions. Adult membership in the community is voluntary, in the sense that one becomes an adult member upon choosing, during late adolescence, to undergo baptism into the Amish church. Earlier adolescence typically includes an informal period of communally tolerated "acting out," in which Amish teenagers may adopt non-Amish clothing

and hair styles, listen to popular music, drink alcohol, or purchase automobiles. Thus, the choice to become an adult member is informed by some experiential knowledge of alternative lifestyles in the non-Amish world. Today, upwards of 80 percent of all Old Order Amish children choose to remain Amish as adults (Kraybill 1989).

10. Olshan (1981, p. 303).